Justice distributive : opinions, jugements et choix individuels.

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Sous le titre

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Résumé.

Cette thèse a pour objet l'examen empirique des préférences individuelles dans certains problèmes de distribution. L'analyse des préférences individuelles est menée à partir de leur expression sous forme d'opinions, de jugements et de choix. D'une part, nous mettons à jour les conceptions individuelles du juste sur lesquelles repose l'évaluation normative de certaines règles d'allocation de ressources, droits et obligations. Nous cherchons d'autre part à comprendre les raisons qui guident les individus dans leurs choix distributifs. La thèse se compose de six études indépendantes utilisant différentes méthodes empiriques (questionnaires, enquêtes et expériences de laboratoire). La première partie de la thèse traite de l'attribution de droits prioritaires dans le contexte de l'économie des transferts entre générations (héritage et retraites) et dans le domaine de la santé. Dans la deuxième partie, nous étudions des situations où le choix distributif résulte d'un arbitrage entre l'intérêt personnel de l'agent et celui d'autrui. Nous étudions cet arbitrage dans le cadre des politiques publiques de type redistributif et dans une situation de marchandage stylisé entre des agents ayant des revendications asymétriques. Dans cette partie, nous faisons l'hypothèse que les motifs et les déterminants des choix ne se réduisent pas aux intérêts privés des agents. En particulier, nous prenons en compte les attentions à l'autre et les considérations d'équité et de réciprocité. Nous validons cette hypothèse par le biais d'un certain nombre de tests économétriques et expérimentaux.

Summary.

This work consists of a collection of essays on empirical studies about distributive justice. The object of the work is to study individuals' views on how scarce resources should be distributed in the society. Individuals' preferences are either elicited as beliefs and judgments or observed as behaviors in a number of distributive contexts. We are both interested in revealing the individuals' conceptions of justice when they are concerned with a normative evaluation of distributive rules, and in understanding the rationales behind distributive choices. In the first part, we study the entitlement to priority rights in the context of trasferts between generations (bequests and retirement) and in the context of health care. The framework used in the second part deals with situations where a trade-off exists between one's own private interest and the others' one. In particular, this trade-off is analysed with respect to the issue of redistributive public policies and in a context of bargaining occurring between agents with asymetric claims. Throughout we assume that individuals take distributive decisions or express distributional judgments, by taking into consideration broader reasons than their personal material interest. We consider more specifically fairness and reciprocity rationales. The assumptions are validated through empirical evidence.

SOMMAIRE

"If men's conceptions of justice finally turn out to differ, the way in which they do so is a matter of first importance. Of course, we cannot know of how these conceptions vary, or even when they do, until we have a better account of their structure. And this now we lack, even in the case of one man, or homogenous group of men. (...) Similarly, if we should be able to characterize one educated person's sense of justice, we would have a good beginning towards a theory of justice. We may suppose that everyone has in himself the whole form of the moral conception." John Rawls, *A Theory of Justice.*

1 Introduction.

1.1 Motivations.

Nous étudions dans cette thèse les préférences individuelles à l'égard de certains problèmes de distribution. Nous menons l'analyse des préférences individuelles à partir de leur expression sous forme d'opinions, de jugements ou de choix.

Notre objectif est double. Nous voulons d'une part décrire les conceptions individuelles du juste à travers l'étude des attitudes individuelles face à des problèmes de répartition de ressources et d'attribution de droits et d'obligations. Nous cherchons d'autre part à comprendre les raisons qui guident les individus dans leurs choix distributifs.

Les motivations qui inspirent le travail sont de deux ordres. D'une part, l'étude des conceptions individuelles du juste face à des problèmes qui relèvent de la justice distributive se fait en résonance au débat normatif autour des questions d'équité sociale. Un des enjeux de ce débat étant l'appréciation de la justesse des institutions qui décident de la répartition des ressources et qui conditionnent les opportunités individuelles, nombreux sont ceux qui considèrent que cette appréciation ne peut pas se faire de manière isolée, sans relation avec les sentiments de justice individuels. D'autres estiment que les matériels empiriques alimentent la réflexion normative en tant que telle.

D'autre part, notre travail doit se lire dans la perspective d'une reconsidération critique de certaines hypothèses de base de la théorie économique, telles que les postulats de préférences intéressées et de conséquentialisme. On doit notamment aux travaux empiriques et expérimentaux, la mise en évidence de faits contraires aux prédictions de la théorie du choix rationnel. Les développements théoriques auxquels ces résultats expérimentaux ont donné lieu adoptent une vision élargie de la rationalité axiologique, puisqu'ils intègrent au spectre des motivations individuelles les attentions aux autres, les intentions et les considérations d'équité.

1.2 Méthode.

La thèse repose sur l'utilisation de méthodes expérimentales et empiriques. La démarche expérimentale que nous adoptons comprend différents types de techniques de recueil de données. Nous utilisons notamment la méthode dite des préférences déclarées, où le contrôle de l'information données aux sujets est obtenu grâce à la formulation de scénarios épurés. La mise en situation se fait à travers la description d'un problème de distribution, qui peut être plus ou moins formalisé, face auquel les sujets doivent faire un choix hypothétique. Dans la méthode des préférences déclarées, on demande explicitement au sujet d'émettre un jugement, tandis qu'on ne demande pas d'indiquer les raisons du jugement. Il s'agit alors, au travers de la formulation de scénarios faisant varier le nombre et le contenu des informations, de déduire les motivations qui sous-tendent le jugement. La méthode des préférences déclarées s'oppose à la méthode expérimentale proprement dite, et en particulier aux expériences de laboratoire où l'on observe un choix factuel dans un environnement contrôlé. Dans ce contexte, le protocole expérimental définit les variables de contrôle de l'expérience, et les modalités appropriées de son déroulement. Nous utilisons la méthode expérimentale pour analyser une situation de marchandage. Finalement, l'analyse des données d'opinions à partir d'une enquête socio-économique traditionnelle fait l'objet du chapitre 5. A la différence des autres études où nous élaborions nous mêmes les questions et le protocole, nous avons uniquement procédé au traitement de données d'enquête sans formuler directement les questions.

1.3 Organisation du travail.

La thèse se compose de six chapitres dédiés à des études indépendantes. Les préférences individuelles sont appréhendées dans deux types de problème distributif. Premièrement, nous avons traité de l'attribution de droits prioritaires dans des cas de répartition de ressources rares. Deuxièmement, nous avons analysé des situations où le choix distributif résulte d'un arbitrage entre l'intérêt personnel de l'individu et l'intérêt d'autrui.

Les matériels bibliographiques de référence sont de trois types. Dans les chapitres I et II, nous utilisons les théories normatives de la justice. Pour les chapitres III et IV, nous nous situons dans le cadre de la littérature appliquée ayant trait aux décisions publiques dans le domaine de la santé. Les deux derniers chapitres font référence aux travaux microéconomiques sur la rationalité individuelle dans des cas de choix distributifs interactifs.

Le premier chapitre traite des conditions de jugement impartial. Le test empirique que nous mettons en oeuvre montre que les individus sont capables de porter des jugements distributifs qui ne traduisent pas un point de vue intéressé.

Le deuxième chapitre s'intéresse aux inégalités individuelles dérivant des choix risqués, et pose la question de la définition appropriée de la responsabilité

morale dans de tels contextes. Nous mettons ainsi à jour les opinions sur la teneur de la responsabilité individuelle et les conséquences injustes que l'issue du risque peut donner.

Les chapitres 3 et 4 traitent de la question d'attribution de droits prioritaires dans le domaine de la santé à l'aide de règles d'allocation qui sont soit de type utilitariste, soit ne sous-entendent aucune conception du bien-être individuel. Les études reposent sur l'approche dite " Relative Value of Statistical Life ", qui est une spécification particulière de l'analyse coûts-bénéfices (chapitre 4), et sur l'approche de l'équité en tant que priorité, qui est neutre par rapport au contenu de la revendication individuelle (chapitre 3).

Le chapitre 5 étudie les préférences individuelles vis-à-vis des politiques redistributives publiques. Nous analysons le soutien donné aux politiques distributives à travers les croyances sur les déterminants de la pauvreté ainsi qu'à travers les contreparties demandées aux bénéficiaires de l'aide publique.

Le chapitre 6 part d'une situation stylisée de marchandage où l'enjeu de la négociation est nettement plus important pour certains individus que pour d'autres. Le test expérimental réalisé vise à identifier les effets de cette diversité sur les résultats de la négociation.

1.4 Les justifications méthodologiques de l'approche empirique dans les questions de justice distributive.

Il convient de faire précéder la présentation de notre travail par une courte discussion critique de la validité des approches empiriques et expérimentales sur le thème de la justice distributive ainsi que de leur apport dans des disciplines telles que l'économie normative et la théorie du choix rationnel.

On distingue généralement deux groupes de travaux empiriques sur la justice distributive. Un premier groupe vise à fournir un test empirique des comportements individuels, son enjeu étant d'identifier les raisons qui justifient l'action individuelle afin de parvenir à une expression de la rationalité qui soit adéquate à des fins explicatives et éventuellement prédictives. Un deuxième groupe de ces études s'est développé dans une ligne différente et autonome. Ce deuxième groupe de travaux tire son origine des théories normatives de la justice et c'est donc avec ces dernières, et plus généralement avec l'éthique appliquée et l'économie normative, qu'il entretient son dialogue critique.

Nous ne voulons pas ici procéder à une description de ces deux groupes de travaux (pour laquelle nous renvoyons à Konow, 2003) ; nous revenons en revanche sur les différences essentielles entre les deux approches dans le cadre de leur justification méthodologique respective.

La pertinence de la démarche empiriste dans les questions de justice distributive n'a pas manqué de susciter des débats dans la communauté scientifique ([6][9][14][16]). Notamment, les philosophes mettaient en garde contre l'utilisation de la méthode empirique, avec l'idée que ses résultats ne prouveraient pas le bien-fondé de telle ou telle conception de la justice. La critique portée à la recherche empirique est qu'elle ne serait pas en mesure de fournir une validation

des arguments normatifs mobilisés par une théorie. C'est le point de vue de Miller (1994), pour qui il existe une différence importante entre acceptabilité et justification. Montrer que certains principes sont partagés à grande échelle n'est pas une preuve du fait qu'ils soient justifiés, ainsi il se pourrait que les gens aient une conviction particulière pour des mauvaises raisons. Or, le but d'une théorie normative est de montrer en quoi un jugement est justifié. Pour Elster (1992) la justesse d'une théorie morale se définit en termes indépendants de la confrontation entre principes et intuitions éthiques.

Cette critique, que nous partageons dans cette formulation si générale, s'est exprimée sous des formes propres à l'objet précis auquel elle s'adressait. Si dans le cadre des travaux empiriques sur les jugements distributifs, l'objection portait notamment sur la légitimité de cette approche à des fins de justification des matériels normatifs, en revanche, les expériences de laboratoires ou les études de terrains ayant pour objet les choix factuels, ont été jugés en décalage par rapport au contenu des théories normatives.

Il nous semble important d'indiquer que les expérimentalistes reçoivent plutôt favorablement cette objection. Les économistes expérimentaux se montrent en premier très prudents sur la généralisation des résultats au delà de la sphère 'positive' par rapport à laquelle ses résultats sont obtenus (Konow, 2003). L'objectif principal de ces tests expérimentaux n'est pas, en effet, la mise en évidence des critères de justice tels que les théories morales les définissent. Pour voir cela, il suffit d'examiner l'objet immédiat de leur travail.

1.4.1 Ce que l'économie expérimentale fait....

Suivant l'exemple des recherches expérimentales dans les sciences exactes, les tests de laboratoire en économie ont principalement visé à la validation empirique de théories élaborées pour décrire, expliquer et éventuellement prédire les actes individuels. Par ailleurs, certaines expériences ont servi à mettre en évidence des régularités comportementales et à délimiter l'observable. Les études expérimentales mises en œuvre avec un tel objectif permettent d'identifier les réalisations possibles de certains faits, éventuellement d'en mesurer l'occurrence, et enfin d'évaluer la probabilité que ces faits se produisent dans des conditions semblables. Lorsque ces tests sont réalisés pour isoler des facteurs causaux sans hypothèses au préalable, les tests participent plutôt de la démarche que Roth (1988) appèle "searching for facts".

1.4.2 ....et ce qu'elle ne fait pas.

Dans le cadre des expériences de laboratoire, les décisions de justice distributive ont été appréhendées comme résultat d'un choix interactif (on renvoie au chapitre final de la thèse pour certaines références de ces travaux). L'objectif de ces expériences est la caractérisation des solutions distributives auxquels les sujets parviennent et la compréhension des motivations individuelles et des facteurs cognitifs qui justifient leurs choix. Ce type d'expérience a pour but l'identification des motivations – éventuellement de type éthique – qui guident

les décisions individuelles ayant des dimensions sociales. L'enjeu majeur de ses travaux ne se situe pas dans la définition des principes de justice que l'on estime adéquats pour bâtir une théorie normative.

1.4.3 Ce que les travaux empiriques sur les jugements distributifs font....

Nombre de philosophes reconnaissent l'utilité de la confrontation systématique entre les matériels théoriques de la théorie de la justice et les jugements distributifs individuels. Toutefois, il y a une certaine divergence sur la nature et l'intensité de ces liens, ainsi que sur les modalités appropriées avec lesquelles l'expérimentation devrait se tenir.

Miller (1994), par exemple, exclut systématiquement l'utilisation de protocoles expérimentaux dans lesquelles l'intérêt personnel serait en jeu lorsque l'expérience porte sur une vision normative de l'équité. On retrouve ici la tradition Rawlsienne des jugements bien pesés : "des jugements solides et avisés, auxquels nous parvenons avec un raisonnement éclairé, sans influence aucune de l'émotion ou de la peur. Ils ne pourraient pas se déployer, par exemple, si leur expression comportait "des chances d'en tirer profit d'une manière ou d'une autre " ou s'ils " (étaient) influencés par un soin excessif de nos propres intérêts (Rawls, 1971)"[12]. Selon Konow (2003) l'objectif principal des études sur la justice distributive est celui d'appréhender les attitudes d'un observateur impartial, plutôt que celles des parties directement concernées par la distribution. Ceci soulève la question de la pertinence de la rémunération des sujets dans le cadre de ce type d'études (alors que la rémunération est nécessaire dans les expériences de laboratoire) et d'autre part implique des restrictions quant à la typologie de méthode à utiliser. Ainsi, on préconiserait l'utilisation de questions formulés comme des scénarios hypothétiques qui fassent abstraction de la situation personnelle de l'interrogé. L'avantage de ce type de questionnaire est aussi à entrevoir dans la richesse informationnelle du contexte de choix, ce qui rend possible l'expression des jugements. En effet, le but de tels enquêtes étant la mise à jour d'évaluations et de jugements moraux, il semble nécessaire que ceux-ci puissent se déployer selon les modes du discours normatif. Clément (1997) insiste sur le fait que la nature des jugements et des préférences qui font l'objet de l'examen requièrent des conditions expérimentales particulières. Ceci signifie entre autre : a) que le "contexte institutionnel de l'expérience doit favoriser un raisonnement impartial de la part des sujets" ; b) que les jugements "aient la caractéristique d'être des choix éclairés".

1.4.4 ....et ce qu'ils ne font pas.

A la différence de l'économie expérimentale classique, qui procède à la validation des théories positives à travers l'observation des comportements individuels, les méthodes empiriques qui mettent à jour les intuitions éthiques et les opinions en matière de justice distributive n'ont pas l'ambition de fournir un test des théories normatives de la justice. La justesse d'une théorie normative n'est

pas à rechercher prioritairement dans la conformité de ses hypothèses aux données du réel (dans les cas étudiés dans la thèse ces données sont les intuitions éthiques et les évaluations individuelles du juste). Elle demande en revanche l'explicitation d'un certain nombre d'arguments substantiels ainsi qu'une articulation cohérente et adéquate de ceux-ci.

Il faut donc, préliminairement à toute discussion sur les apports des études expérimentales aux questions de justice distributive, qualifier le sens de l'entreprise. Il ne s'agit pas d'une procédure qui vise à la validation empirique d'une théorie normative- tentative, qui en elle même n'aurait pas beaucoup de sens- mais d'une procédure qui peut se révéler utile pour un examen séparé des arguments sur lesquels une théorie normative devrait se fonder (lorsque la nature de ces arguments rend pertinent cet examen)- ou pour éclairer des faits autour duquel le discours normatif pourrait se construire.

1.5 Le statut commun des travaux empiriques sur la justice distributive.

Nous allons présenter dans cette section les arguments évoqués par les 'praticiens' de la recherche empirique sur la justice distributive, ainsi que les retours engendrés par celle-ci sur la réflexion philosophique et épistémologique. Nous respectons, pour ce faire, l'organisation usuelle de la discussion qui met en avant trois arguments : l'argument 'food for thought' (Swift 2002), l'argument de la faisabilité, et l'argument de la justification. Ce dernier argument est sans doute le plus controversé.

Selon Miller (1994), le rôle d'une théorie normative de la justice est de clarifier et d'éclaircir la structure profonde des intuitions ordinaires, qui apparaissent comme confuses ou ambiguës, ou éventuellement contradictoires. Cette position puise ses origines dans la vision aristotelicienne selon laquelle le philosophe s'efforce de corriger le raisonnement ordinaire lorsqu'il est contradictoire pour en dégager une vision de la justice cohérente, et se distingue de la vision platonicienne selon laquelle le philosophe détecte les erreurs fatales dont les croyances souffrent, mais propose une conception personnelle de la justice qui afin de régler la société.

La formulation de l'équilibre réfléchi (Rawls, 1971) s'inscrit dans la tradition de la vision aristotelicienne. Selon Rawls, une théorie de la justice décrit les sentiments moraux et a pour ambition de rendre compte de la conception morale individuelle. Une théorie de la justice " expose les principes gouvernants notre capacité morale, ou plus particulièrement, notre sens de la justice "[12]. Rawls précise que toutefois, du point de vue de la théorie morale, la meilleure analyse du sens de la justice d'une personne n'est pas celle qui s'accorde le mieux avec ses jugements formés avant tout examen d'une conception de la justice ; c'est en revanche celle qui s'accorde avec les jugements bien pesés mis en équilibre réfléchi.

L'équilibre réfléchi exprime la convergence entre les principes de justice correspondant à une certaine conception de la justice et nos convictions bien pesées, c'est-à-dire l'application de ces principes dans des cas particuliers (les jugements

moraux à propos d'une situation bien délimitée). La convergence s'obtient selon Rawls à travers un ajustement mutuel entre les conditions initiales dont on dérive les principes de justice et les jugements bien pesés. La construction analytique de l'équilibre réfléchi tient lieu d'une justification "une fois les points de départ mutuellement acceptés ou quand les conclusions sont si complètes et si contraignantes qu'elles nous persuadent du bien-fondé de la conception qu'expriment leurs prémisses"[12]. On reconnaît pour ces raisons une valeur méta-éthique à ce concept, c'est-à-dire en dehors d'une théorie de la justice particulière ; en revanche, peu interprètent ce concept dans les termes d'une convergence factuelle entre les principes de la justice et les jugements ordinaires.

Si le philosophe peut imposer à sa réflexion la preuve de l'équilibre réfléchi, la confrontation entre ses jugements bien pesés et les jugements ordinaires est estimée utile à deux titres. D'une part elle permet de repérer les points fixes auquel le philosophe ne serait pas prêt à renoncer, et d'autre part elle évite que les principes proposés résultent d'une vision idiosyncratique. Elster (1992) reconnaît l'utilité d'une confrontation entre les intuitions du philosophe et celles des autres dans la mesure où le philosophe ne pourrait pas défendre une position sans d'abord avoir compris pourquoi les autres pensent différemment. Dans cette idée, toute personne qui s'engagerait dans un processus de compréhension d'une autre vision du monde ou d'un autre mode de pensée, risquerait de changer d'avis. Pour cette raison, Elster considère que les faits empiriques ne devraient pas être directement incorporés dans une théorie, mais qu'ils ont une importance capitale pour l'élaboration et le raffinement des arguments du philosophe. Miller (1994) estime que les jugements bien pesés du philosophe demandent aussi une confrontation systématique avec les conceptions ordinaires de la justice : sans cette confrontation le philosophe ne serait pas capable d'identifier quel sont les points fixes de ses jugements bien pesés. Swift (2002) reconnaît que les résultats empiriques ont certes une valeur en tant qu'éléments indépendants à la réflexion du philosophe, mais nie que ces éléments puissent être eux-mêmes constitutifs de la justesse d'une théorie. L'auteur écarte le risque de solipsisme de l'introspection philosophique, et pointe au contraire le caractère corale de sa démarche (au moins au sein de sa communauté). Schokkaert (1999) est plus dubitatif sur ce point si le débat se tient dans une communauté close, voire endogamique, ce qui peut contraindre l'élaboration d'une théorie avec des fins pratiques. On voudrait en revanche une théorie "qui soit généralisable à l'ensemble de la société." Selon Schokkaert, le raisonnement philosophique ne devrait pas pourvoir une synthèse des résultats empiriques ; il s'agirait en revanche d'une confrontation entre les constructions théoriques et les intuitions ordinaires pour guider la réflexion théorique dans la direction appropriée. Le point est aussi soulevé par Swift (2002), qui reconnaît que les philosophes ont tenu compte des jugements distributifs mis à jour empiriquement, mais qu'ils ne les ont pas directement incorporé dans leurs théories. Un exemple précis de retour des travaux empiriques est donné à propos de la justice locale, c'est-à-dire propre au contexte distributif. Les philosophes lui ont en effet porté une attention grandissante à partir de la mise en évidence de la pertinence des conceptions de la justice locale.

Les études empiriques sur la justice distributive peuvent se révéler perti-

nentes aussi pour un deuxième ordre de raisons ; ce sont les raisons de faisabilité de la théorie et des politiques publiques qui voudraient s'inspirer de celle-ci. La prétention des théories de la justice de type politique ainsi que de l'économie normative, est de fournir des recommandations pour l'organisation concrète de la société. Les implications d'une théorie de la justice doivent alors être réalistes, elles doivent contenir des préceptes et des principes qui pourraient être acceptés par les individus, et dont la mise en pratique doit évidemment se faire dans le contexte existant. Cela signifie aussi que la théorie doit porter son attention sur le point de départ et sur les états du monde réalisables à partir de celui-ci, si elle ne doit pas se fonder essentiellement sur ceux-ci.

La pertinence pratique des préceptes de l'économie normative est aussi réaffirmé par Schokkaert (1999) pour qui "le sens ultime de l'économie normative est la définition des procédures et institutions justes qui permettent de rapprocher la société d'un état juste. Les opinions ou les préférences des citoyens déterminent le contexte social dans lequel ces institutions et ces procédures doivent fonctionner. Il est clair que leur réussite dépend en partie de l'adhésion qu'elles suscitent." Typiquement l'opinion publique peut affecter de manière significative la possibilité concrète que la justice puisse être réalisée.

Une certaine précaution doit être utilisée, néanmoins, lorsqu'on insiste sur la portée pratique de la théorie de la justice, dans la mesure où celle-ci fournit certes un argument d'appoint pour la prise en considération des résultats empiriques, mais n'est toujours pas une preuve de la justesse des conceptions du juste qui se dégagent de ces résultats. Cohen (2001) dit à ce propos que "les faits de la nature humaine importent pour les implications pratiques du juste, ou à combien de justice nous pouvons nous attendre, ou bien encore pour savoir à combien de justice nous devons renoncer (...) mais ils ne font pas de différence par rapport à la question de la vraie nature de la justice en tant que telle".

Si la raison de la faisabilité pratique s'exprime sous la forme d'une contrainte dont il faudrait tenir compte dans l'élaboration d'une théorie de la justice, une troisième raison, de nature plus puissante, indiquerait que les sentiments individuels devraient être constitutifs de ce que la justice requiert (Swift, 2002). Selon cette idée, une partie de la réponse qu'il faudrait donner à la question de la justice distributive s'inscrit dans les raisons données par les agents (c'est l'argument de la justification). Dans une version faible de cette idée, quand le philosophe parle de justice il devrait s'assurer que ce dont il parle est bien ce à quoi les autres gens font généralement référence lorsqu'on parle de la justice. Dans une version plus forte de l'argument de la justification, toute théorie de la justice devrait spécifier les raisons pour lesquelles les individus devraient se conformer à ses principes. Ce qui veut dire qu'une théorie devrait indiquer les raisons qui pousseraient les individus à agir selon ses principes plutôt qu'autrement.

Un exemple important est donné par la place du sens du juste dans la théorie de Rawls (1963, 1971). Le sens du juste anime les parties dans la position originelle et soutien l'adhésion aux principes de justice. L'acceptation de ces principes tient à la fois à leur reconnaissance mutuelle ainsi qu'au sens du juste qui induit les individus à s'y tenir. Une société bien ordonnée est organisée selon une conception publique de la justice : " le caractère public de la conception de

la justice implique que ses membres ont un désir profond et normalement efficace d'agir conformément aux principes de la justice."[12] Le désir d'agir en conformité aux principes de la justice, ainsi que de participer à la défense des justes institutions, ont des implications importantes pour la théorie. La stabilité d'une conception de la justice dépend, pour Rawls, du sens de justice qu'elle cultive. Dans une société bien ordonnée, les individus acquièrent le sens de la justice correspondant ainsi que le désir de participer à la défense de ces institutions. Ainsi Rawls affirme aussi que la stabilité est un des éléments qui pourraient conditionner le choix d'une conception de la justice à la place d'une autre : "Toutes choses égales par ailleurs, les personnes dans la position originelle adopteront le système de principes le plus stable. Si attirante qu'une conception de la justice puisse être à d'autres points de vue, elle est sérieusement en défaut si les principes de la psychologie morale sont tels qu'elle ne puisse engendrer chez les êtres humains le désir nécessaire de se conformer à ses ordres."[12]

Dans une perspective similaire on rappellera la position de Walzer (1983), pour qui le rôle central joué par les motivations individuelles dans le choix d'une conception particulière de la justice se justifie par le caractère conventionnel d'une théorie de la justice (c'est-à-dire relié à la contingence sociale et historique dans laquelle une conception de la justice s'inscrit) et par la nature démocratique qu'une telle théorie devrait avoir. Ainsi, il y auraient des bonnes raisons pour tenir compte des conceptions ordinaires du juste indépendamment du fait qu'elles soient valides ou pas, tout simplement car elles ont une valeur en tant que conceptions exprimées par les membres de la société. Swift (2002) reconnaît la validité de cet argument uniquement en termes de justice procédurale, tandis qu'il resterait toujours à montrer la justesse de la décision distributive (comme dans le cas où le verdict des jurés serait légitime, même si les jurés ont jugé mal ce cas).

Finalement une idée qui est éventuellement contestable mais qui est défendable, est l'idée de la légitimité des raisons individuelles et des sentiments de justice, dans la mesure où l'on estime que ces sentiments de justice pour faux qu'ils puissent être (au sens de non justifiés) ont poussé les individus à agir d'une manière particulière. Par exemple, on peut contester la justesse d'un principe qui récompense le mérite, mais en revanche on pourra considérer cette revendication comme légitime si l'on sait que les personnes ont tenu un certain comportement en croyant que le mérite allait être récompensé. Swift (2002) souligne que la légitimité fait appel à un principe indépendant, qui n'a pas de lien avec la justesse du contenu de la revendication.

....d'autres objections.

Une autre objection s'est articulée autour de la position qui dénonce une différence irréductible entre le domaine du normatif et le domaine du positif. Souvent cette position a été présentée sous la forme du paralogisme Humien (ou erreur naturaliste), selon lequel on ne peut pas déduire le devoir être de l'être. Ce principe admet une pluralité d'interprétations (nous les présentons très brièvement et renvoyons à Demunijck (2002) pour un examen détaillé).

L'interprétation linguistique du paralogisme Humien pointe l'écart déductif

existant entre les prémisses (qui s'expriment à l'indicatif) et les conclusions (qui s'expriment au conditionnel ou à l'impératif). Si on accorde à la formulation originelle du principe de Hume une interprétation linguistique, ceci signifierait uniquement que l'inférence déductive n'est pas créative (Mongin, 2002 ; Boudon, 2003). Ainsi la légitimité de la démarche empiriste n'en serait pas remise en cause (Boudon, 2003 ; Demunijck, 2002).

L'interprétation sémantique ou métaphysique, mise en avant par le Cercle de Vienne et Moore en particulier, insiste en revanche sur le dualisme entre faits et valeurs. Le débat philosophique que cette thèse a engagé est connu aujourd'hui sous le nom de naturalisme. La thèse principale des anti-naturalistes est que les propositions morales ne font pas référence aux éléments contingents du monde réel, et que donc il semblerait vain de chercher un lien entre la notion du juste et les jugements individuels. Les jugements de valeurs ne peuvent pas se transformer dans des jugements factuels, le bien ou le juste ne peuvent pas se définir en termes naturels (Boudon, 1996). Le naturalisme fait référence à l'ensemble des doctrines selon lesquelles les normes morales et les valeurs peuvent se réduire ou être expliquées par des faits naturels. Une définition stricte des faits inclut les faits physiques et biologiques, tandis que dans une acception plus étendue on fait rentrer aussi les faits humains ou sociaux. Une définition faible admet que les valeurs puissent se traduire dans les comportements factuels, ainsi les jugements, les règles sont considérés comme des événements, des faits véritables du monde naturel. Par exemple, certaines règles émergent comme solutions à des problèmes de coopération, ou de coordination. La version faible du naturalisme peut ainsi concevoir que l'éthique ait une fonction sociale. Une discussion plus approfondie des thèses naturalistes va au delà de nos propos (nous renvoyons à Demunijck (2002) pour un commentaire critique de ces thèses en relation avec les études empiriques sur la justice distributive).

Finalement, on a discuté du paralogisme Humien en relation avec les différences de méthode entre sciences et éthique, et plus particulièrement de leurs finalités respectives. A la différence des sciences pour lesquelles "ce qui explique, justifie"([6]), l'éthique aurait besoin d'autres fondements de la justification. Les sciences ont comme finalité de comprendre le monde et de l'expliquer, tandis que l'éthique vise à justifier pourquoi il faudrait qu'il soit ainsi et non autrement. Nous avons déjà abordé ce point lors de la discussion sur les apports possibles des travaux empiriques, et conclu à la discutabilité de l'argument de la justification en dehors de théories particulières comme celle de Rawls ou celle de Walzer.

1.5.1 Les points à retenir.

L'étude expérimentale des préférences distributives peut s'avérer utile à plusieurs titres.

D'abord, elle fournit une caractérisation du sens commun du juste, et permet de vérifier dans quelle mesure celui-ci est en accord avec les éléments constitutifs des théories normatives et positives, ou bien s'il va à l'encontre de celle-ci. Cette

confrontation peut guider la réflexion théorique dans les domaines de l'économie normative et des théories normatives de la justice. De plus, l'étude du sens du juste fournit des matériels que les théories explicatives du comportement individuel se montrent soucieuses d'intégrer. Ceci est mis en évidence par le rôle du "sens du juste" dans le cadre de la conception de la justice chez Rawls. La prise en considération du sens du juste parmi les déterminants de l'action individuelle signifie en effet adopter un paradigme d'individualisme méthodologique élargi (Boudon, 1996 et 2003). Finalement, la prise en compte des préférences individuelle dans la conception des politiques sociales publiques peut se révéler un facteur clef de leur réussite.

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2 Les apports de la thèse.

2.1 Chapitre I : Les conditions de Jugement Impartial.

Dans le premier chapitre "Choosing Impartially", nous étudions les conditions de jugement impartial lors de l'attribution de droits et d'obligations. Afin d'appréhender les conceptions individuelles du juste, nous créons un cadre propre à l'expression de jugements individuels de nature éthique. Nous élaborons ainsi un protocole expérimental dans lequel le type d'information donnée aux sujets permet de cerner s'ils jugent ou non selon un processus impartial.

Le test sur l'impartialité des choix distributifs consiste à observer si les circonstances particulières dans lesquelles chaque individu interrogé est mis, affectent (ou n'affectent pas) son choix. Dans chaque scénario, on attribue un rôle au sujet et on lui demande de choisir la juste attribution du bien. Pour que ces choix puissent être qualifiés d'impartiaux, l'individu interrogé doit donner une solution au problème distributif sans que le point de vue particulier à partir duquel il juge le problème ne conditionne cette solution.

Nous réalisons aussi un test de robustesse des jugements individuels, selon l'usage dans les travaux empiriques qui visent à la mise à jour des jugements distributifs. Pour cela, nous étudions la variabilité des jugements distributifs par rapport à deux éléments : le type de problème distributif et la composition de l'échantillon.

Les conjectures d'indépendance des jugements distributifs par rapport au rôle, à l'objet distribué et à la population sont appelées respectivement conjecture d'impartialité, conjecture de neutralité par rapport au contenu de la distribution, et conjecture d'universalité. Pour tester les trois conjectures, nous avons réalisé un questionnaire organisé sous la forme de situations fictives de choix. Chaque scénario traite d'un problème de distribution particulier et leur formulation reflète la perspective d'un des acteurs impliqués dans la décision distributive. Ceci est en effet un dispositif expérimental qui rend possible le test de la conjecture d'impartialité. Le test de la conjecture de neutralité par rapport au contenu de la distribution est réalisé en fixant le cadre distributif (les transferts intergénérationnels) et en faisant varier la nature de l'objet distribué (il s'agit de transferts de type soit descendant, soit ascendant). Le test de la conjecture d'universalité repose sur les comparaisons transculturelles des jugements éthiques. Les observations ont été en effet collectées à partir de deux échantillons de sujets, le premier en France et le deuxième en Inde.

Nos résultats indiquent que la conjecture d'impartialité est validée, tandis que les conjecture de neutralité par rapport à l'objet distribué et d'universalité sont rejetées. Par rapport au premier point, en effet, les participants se sont montrés capables de dissocier l'intérêt individuel de la juste attribution des droits. En ce qui concerne l'invariance des jugements entre pays, nous avons trouvé que les principes mis en avance par les deux cultures sont significativement différents. En particulier, l'objet de l'étude étant les transferts intergénérationnels, nous avons remarqué que les normes de solidarité intra-familiale ascendante et de réciprocité directe étaient les normes prégnantes en Inde, tandis qu'en

France on privilégiait plutôt des logiques de réciprocité indirecte. Enfin, nous avons constaté que les principes de justice choisis variaient avec le problème distributif considéré.

L'apport principal de ce chapitre est d'ordre méthodologique. Cette étude se situe dans la perspective des travaux qui insistent sur la pertinence pratique que doit avoir une théorie de la justice. Plus précisement, dans le cadre de notre étude, ce sont les contraintes psychologiques individuelles (capacités d'abstraction et de projection dans une situation extérieure) qui ont fait l'objet de notre attention. A la lumière de nos résultats, il semble raisonnable de supposer que les individus puissent s'exprimer comme des juges impartiaux dans des problèmes de distribution relativement simples.

2.2 Chapitre II : Responsabilité individuelle et malchance, facteurs déterminants des inégalités.

Le deuxième article "Les conséquences de la malchance sont-elles injustes ? " traite des déterminants des inégalités inter-individuelles à partir du clivage choix-circonstances, élément central des théories égalitaristes. L'enjeu de ces théories est de dégager une conception de la responsabilité individuelle qui permette de séparer dans les décisions et actions individuelles ce qui relève des conditions et des contraintes imposées à l'individu, de ce qui tient à la volonté et à la détermination personnelles. Dans ce travail nous avons abordé un point précis de ce débat, qui est la mesure de la responsabilité individuelle dans les cas de choix face au risque et de décisions dont les effets sont incertains et éventuellement en dehors du contrôle individuel. Dans de telles situations, la chance peut modifier les résultats des choix individuels, ou simplement altérer la situation finale des individus (qui n'étaient pas en mesure de choisir parmi des conduite risquées). Un courant égalitariste prétend que la responsabilité se définit en termes complémentaires à l'opération de la chance. Cette vision des choses repose sur la distinction entre chance accidentelle et chance intentionnelle, la chance accidentelle répertoriant toutes les situations où l'issu défavorable de la décision individuelle ne peut être en aucun cas imputable à l'exercice de la volonté individuelle. En revanche, la chance intentionnelle regroupe les cas où l'individu aurait pu éviter le mauvais résultat final soit en faisant un choix alternatif, soit en tenant une conduite consistant à s'assurer contre le risque d'un mauvais résultat. Seule la chance accidentelle, selon cette thèse, donnerait lieu à une inégalité injuste et mériterait compensation.

Dans le travail nous présentons une discussion des arguments susceptibles de remettre en discussion cette thèse, et en particulier de façon dont les notions de contrôle individuel et de prévisibilité sont mobilisés et entendues dans la vision qui distingue la chance accidentelle de la chance intentionnelle.

Nous avons réalisé une étude empirique afin de voir si certains de ces arguments affectent l'évaluation des situations de choix et des inégalités qui en découlent. Nous construisons ce test à partir des éléments suivants : l'existence de plusieurs conduites possibles, la disparité des conditions initiales de choix, la nature et la pertinence des informations nécessaires à la décision responsable, ainsi que l'acceptabilité du mauvais résultat final.

Chaque scénario décrit la situation de deux individus face à un choix risqué ainsi que la situation finale (inégale) dans laquelle les individus se retrouvent à l'issu de leur décision et de l'opération de la chance ; dans chaque situation les conditions individuelles du choix ainsi que les facteurs qui sont à l'origine de l'inégalité sont présentés aux sujets interrogés avant qu'il leur soit demandé s'ils jugent cette inégalité juste ou injuste.

Dans l'ensemble, l'existence d'alternatives raisonnablement bonnes (qui indiquent la marge de contrôlabilité du risque) ainsi que la qualité des informations qui accompagnent les choix (la prévisibilité du risque) sont considérés comme des éléments pertinents pour l'appréciation des inégalités.

La conclusion que nous tirons de l'étude empirique ainsi que de notre ré-

flexion sur la question théorique posée dans ce chapitre, est que la distinction entre chance accidentelle et chance intentionnelle n'est pas toujours satisfaisante pour décider du caractère injuste de l'inégalité. Les opinions des interrogés indiquent qu'il y a des cas où un mauvais résultat est considéré comme injuste, même si les individus peuvent être tenus pour responsables de leurs choix. D'autre part, il nous semble que la nature de la situation dont on cherche à évaluer le caractère juste ou injuste est aussi un facteur pertinent pour cette évaluation. Ainsi, lorsque nous évaluons des états de santé graves dans lesquels les individus se retrouvent pour des raisons qui sont en partie imputables à leur conduite, leur situation continue d'être inacceptable.

2.3 Chapitre II : L'equité comme priorité.

Dans le troisième article "What people think is the 'just distribution' of health care ? " (coécrit avec Peter Martinsson), nous étudions la question de la distribution équitable des soins médicaux, en utilisant l'approche de l'équité en tant que priorité (Equity as priority, Young 1994). A la différence des autres théories modernes de la justice, l'approche de l'équité en tant que priorité ne part pas de prémisses normatives autour du *distribuendum* pertinent . L'allocation des droits se fait sur la base de l'évaluation comparée des revendications légitimes, que les demandeurs des soins pourraient avancer. Il s'agit alors de pondérer ces revendications et d'opérer un classement qui est censé représenter un tel arbitrage. Un des avantages de la solution associée aux classements en termes de priorité est que cette solution est ordinale et qu'elle n'exige donc pas de métrique unique pour les droits et les revendications individuels, ce qui paraît souhaitable lorsqu'il s'agit d'évaluer de manière concomitante des caractéristiques personnelles de nature hétérogène comme le besoin, la responsabilité individuelle, l'efficacité du soin, etc. Nous remarquons qu'une telle propriété est particulièrement souhaitable dans le contexte des études expérimentales, puisque l'effort cognitif demandé aux sujets est moindre et que la situation décisionnelle envisagée leur apparaît plus vraisemblable et proche de la réalité.

Dans l'étude empirique que nous avons réalisée, nous observons comment les individus décident de l'attribution prioritaire de droits et quels sont les principes de justice qui régissent telle décision. L'enquête se compose de deux parties : dans la première partie, nous demandons d'établir un traitement prioritaire pour certaines catégories de destinataires potentiels de soins (en pratique les interrogés doivent indiquer le degré de priorité qu'ils veulent accorder à chaque catégorie de patients). Dans la deuxième partie nous demandions aux interrogés de créer de véritables listes d'attente. Nous formulons les alternatives sur la base d'une taxonomie classique de principes de justice (besoin, mérite, *fitness*, droit extérieur) afin de pouvoir mettre en relation les classements individuels avec des normes *prima facie* qui guideraient les choix individuels. Nous conduisons aussi un test de variabilité des jugements distributifs en rapport avec le type de traitement médical et la gravité de la maladie individuelle.

Parmi les résultats principaux, nous observons que le principe du besoin oriente de manière systématique les choix distributifs, que le besoin soit évalué en relation à la gravité de la maladie individuelle ou à la gène provoquée par celle-ci (optique de justice locale) ou bien par rapport à une condition plus générale de précarité économique (dans une optique de justice globale). La conduite individuelle et la responsabilité par rapport à son état de santé, sont aussi des éléments qui viennent structurer les réponses individuelles. Toutefois, cette influence est plus difficile à cerner car elle ne se traduit pas systématiquement par une sanction (dans le cas du manque d'efforts) ou une récompense (en cas de mérite). Sur la base de l'analyse statistique utilisée pour interpréter les données (Analyse par Composantes Principales), nous déduisons que le rôle ambiguë de la responsabilité individuelle tient à une variabilité importante des jugements face à celle-ci.

Pour mettre en perspective les résultats, nous étudions la stabilité du classement général des principes face au choix de la fonction d'agrégation des préférences individuelles. On peut conclure de cet exercice que le besoin ressort toujours comme le principe le plus important, et de manière plus générale que le classement général entre les principes est relativement invariant. Ceci a des implications intéressantes pour les pondérations à retenir en cas d'utilisation des règles d'attribution prioritaires dans le domaine de la santé. Selon les personnes interrogées, le critère du besoin devrait en effet recevoir un poids considérable.

2.4 Chapitre IV : La valeur d'une vie humaine sauvée.

Le quatrième chapitre ("Should age matter in life saving programs ? Some results from India and Sweden", coécrit avec Peter Martinsson) s'inscrit partiellement dans la continuité du chapitre précédent, puisque nous abordons de nouveau la question de la distribution des ressources de santé à travers l'étude des conditions d'accès prioritaire aux traitements médicaux. Toutefois, le cadre conceptuel sous-jacent ainsi que la méthodologie employée se démarquent de l'étude précédente par un certain nombre d'éléments. Tout d'abord nous utilisons une approche welfariste classique en Economie de la Santé (connue sous le nom de "Value of Statistical Life") qui consiste à comparer les coûts et les bénéfices d'un programme médical en transformant les chances de succès du traitement en unités de valeur homogènes aux unités monétaires. En principe il existe différentes façons possibles de mesurer les bénéfices associés au traitement (nombre de vies sauvées, valeur actuelle du capital humain, perte en termes de qualité de vie etc.). Afin d'introduire des considérations d'équité dans l'approche conséquentialiste, nous retenons l'approche dite "Relative Value of Statistical Life", reposant sur une évaluation non monétaire des bénéfices du programme public, qui vise à identifier les priorités fondamentales pour les politiques publiques. En particulier, l'arbitrage est spécifié en termes de l'âge de l'individu sauvé.

La littérature empirique a déjà abordé la question de la fixation des priorités en fonction des critères d'âge de la population, soit à travers l'évaluation contingente, soit par le biais de questionnaires. Nous utilisons une technique nouvelle pour cette application : la technique de "Choice Experiment" (Louvière, 2000). Dans ce type d'enquête, on demande aux interrogés de faire des choix binaires répétées. Les alternatives sont données par deux programmes publics différenciés par rapport au nombre de vie sauvées, à l'age de l'individu traité, à son genre et les caractéristiques de son ménage. Le choix des attributs n'est pas arbitraire, et revêt au contraire un intérêt méthodologique qui est celui de cerner les raisons sous-jacentes aux préférences individuelles. En effet, l'explicitation de facteurs potentiellement corrélés aux intuitions individuelles sur la valeur de la vie humaine en fonction de l'âge, évite le risque d'une extrapolation non contrôlée de l'information donnée aux interrogés.

Nous conduisons cette étude en Inde et en Suède, où les différences démographiques et socio-économiques pourraient avoir des implications pour les profils de préférences individuelles. Contrairement à cette conjecture, nous ne trouvons pas de différences drastiques entre les réponses obtenues en Inde et en Suède. Nous trouvons que l'arbitrage entre efficacité et équité ne dépend pas de manière linéaire de l'âge de l'individu sauvé. Le résultat le plus significatif est que la valeur relative de la vie humaine est estimée avoir un maximum à l'âge de 10 ans, tandis que des facteurs tels que le genre et la composition du ménage ne sont pas pertinents.

L'enjeu principal du travail réalisé dans ce chapitre est de fournir des indications pour la prise de décisions publiques au cas où ils ont un impact particulier sur les catégories d'âge de la population (comme par exemple dans le

cas de politiques de santé publique ou environnementale, lorsqu'on est capable d'identifier des effets séparés pour les destinataires des programmes publics). Il s'avère alors souhaitable de disposer d'outils de décisions qui intègrent des considérations éthique et d'équité. Les résultats obtenus indiquent que, selon les intuitions individuelles, cette intégration ne devrait pas se faire dans le sens d'une discrimination fondée sur l'âge, à l'exception de la priorité donnés aux enfants.

2.5 Chapitre V : Redistribution publique et réciprocité.

Dans l'article "Social preferences on Public Intervention : an empirical investigation." (avec Christine Le Clainche) nous menons une analyse critique des modèles de préférences sociales (c'est-à-dire des modèles incluant les attentions aux autres) à partir de l'examen empirique du soutien à la redistribution publique apporté par les ménages français. Le test empirique consiste en une estimation économétrique des données d'enquête d'opinions de type classique (Baromètre DREES sur la Protection Sociale). En particulier, nous considérons des mesures de redistribution visant à réduire les inégalités et à améliorer le bien-être des classes de bas revenus.

Nous commençons par tester le modèle de base relatif aux préférences intéressées, selon lequel le soutien à la redistribution participe d'une logique assurantielle. Ainsi, ce modèle prédit que la demande de redistribution est fonction des caractéristiques socio-économiques individuelles et plus particulièrement des variables objectives telles que le revenu ou le statut ainsi que des variables subjectives liées à la perception de son propre état de précarité et de besoin vis-à-vis de l'aide publique. Nous procédons donc au test économétrique du modèle d'assurance sociale et constatons que la demande de redistribution n'est pas expliquée de manière satisfaisante par les variables de revenu ni par celles mesurant les risques d'indigence.

Par conséquent, nous intégrons dans l'étude de la demande de redistribution l'observation des normes individuelles. En particulier, nous analysons la manière dont les croyances sur les causes de la pauvreté orientent les attitudes individuelles en matière de soutien à la redistribution. Nous distinguons deux groupes d'individus : ceux qui pensent que la pauvreté est causée par le manque d'effort individuel et ceux qui, à l'inverse, estiment que la pauvreté résulte plutôt d'un manque de chance. Il apparaît alors que les croyances sociales importent pour expliquer les attitudes individuelles à l'égard de l'intervention étatique. Plus précisément, les personnes qui pensent que la pauvreté est causée par le manque d'effort sont moins en faveur de la redistribution publique.

Finalement, nous mettons en oeuvre l'examen économétrique d'un dernier modèle de préférences sociales qui insiste sur les normes de réciprocité. Ce modèle précise les conditions sous lesquelles la redistribution augmente lorsque la solidarité publique est perçue comme une relation de réciprocité. Nous appréhendons les normes de réciprocité par le biais des contreparties que certaines politiques publiques demandent (recherche active d'emploi ou exercice d'activités d'utilité publique). Nous trouvons que la réciprocité peut jouer un effet pervers sur le soutien donné aux politiques publiques. L'évaluation conjointe des croyances sociales et des normes de réciprocité s'avère en effet nécessaire pour distinguer le rôle joué par les contreparties, qui se révèle parfois être une condition *sine qua non* du soutien, facteur qui vient donc contrecarrer la solidarité.

Nous mettons en perspective ces résultats par rapport à la littérature existante dans le domaine. Nous constatons que, du point de vue des normes de justice, la population des individus interrogés semble divisée en quatre groupes.

Nous retrouvons une typologie classique (Bowles and Gintis, 2000), avec des catégories fondées sur les attentions aux autres et la manière dont celles-ci affectent les comportements distributifs. Ces catégories sont celles : des individualistes, des partisans de la réciprocité négative, des partisans de la réciprocité positive et des altruistes inconditionnels.

2.6 Chapitre VI : Choix distributifs et comparaisons interpersonnelles d'utilité.

Enfin, dans le dernier article " Interpersonal Comparisons of Utility in Bargaining : Evidence from a Transcontinental Ultimatum Game, (avec Jean-François Laslier et Stéphane Robin) " nous avons abordé l'optique de la justice comme équité à travers un test de laboratoire du jeu de l'ultimatum. Ce jeu a fait l'objet d'expériences et l'on dispose désormais d'un ensemble de résultats relativement robustes sur les issues de celui-ci. Dans ce jeu, deux individus doivent s'accorder sur la division d'une somme d'argent à partir de la proposition unilatérale d'un des deux individus. Sous les hypothèses standard de préférences intéressées (ou égoïstes) des négociateurs et de connaissance commune de celles-ci, l'équilibre théorique du jeu assigne la quasi-totalité de la somme à l'individu qui, proposant le partage, dispose de l'avantage stratégique le plus important. Or, les nombreux tests expérimentaux de ce jeu vont à l'encontre de cette prédiction théorique. Premièrement, les offres faites à l'adversaire sont souvent très supérieures à celles de l'équilibre théorique, et les propositions de partage sont plus équitables - au sens de l'égalité formelle de la division. Deuxièmement, la négociation échoue lorsque le partage proposé est très inégal. Un vaste travail de réconciliation entre la théorie et les observations expérimentales a alors été engagé, notamment à travers la mise en discussion des hypothèses théoriques portant sur les motivations individuelles. Une des orientations de ce débat concerne l'intégration des normes d'équité - comme référence objective à laquelle se tenir lors de la négociation - dans les comportements individuels. La définition de la norme d'équité pertinente a fait l'objet d'un certain nombre de discussions théoriques, et l'enjeu majeur des études expérimentales afférentes a consisté à la mesurer. Notre démarche s'est inscrite dans cette perspective de définition et de mesure des références normatives qui légitiment les décisions distributives. Tout en choisissant une expérience standard pour l'étude des normes d'équité, nous avons testé une variante originale du jeu de l'ultimatum afin de discuter d'une forme particulière de justice (la justice locale ou relative). Au travers de cette expérience, l'objectif est de tester l'importance de la comparaison interpersonnelle des utilités sur les résultats de la négociation. Il s'agit d'affaiblir l'hypothèse selon laquelle le même gain monétaire produit une utilité identique pour des individus différents.

Notre recherche a ainsi privilégié l'analyse des effets d'hétérogénéité de la population sur les résultats de la négociation. Nous avons réalisé cette expérience entre la France et l'Inde. Les sujets étaient des étudiants français et des étudiants indiens qui ont joué le jeu de l'ultimatum, en position (alternative et exclusive) d'offreur et de receveur. Le résultat principal de notre étude est que les individus s'accordent sur un partage qui est plus favorable (en valeur absolue) à ceux qui ont une utilité marginale de la monnaie plus faible, et plus précisément que les parts relatives sont égalisées en termes d'utilité marginale. En outre, l'equalisandum de cette division est donné seulement par le gain obtenu lors de la négociation (d'où l'émergence de ce que nous appelons une " norme de justice locale "), tandis que la situation des individus en dehors de celle-ci - et notamment le fait d'avoir une utilité globale plus élevée du fait des effets

de richesse - n'est pas pertinente. Nous concluons donc que l'hétérogénéité des agents affecte le résultat de l'interaction et que la réussite de celle-ci tient à la mise en place d'une norme d'équité locale, qui consiste en l'égalisation des gains en termes réels.

Choosing impartially.

Romina Boarini

Abstract

In this paper I discuss a definition of formal impartiality for a given class of distributional problems, and I conduct a questionnaire to test whether people's judgements are in line with this definition. The type of distributional problem at stake is defined in two aspects. First, the distributive decision consists of entitling one claimant to an indivisible good. Secondly, the distributive decision can be taken by either one of the claimants or by an agent external to the negociation (e.g. an arbitrator). More generally, I consider decision-makers who judge the situation from different perspectives. Perspectives of judgments may result in a self-serving biaised distributitive outcome. I call the variously self-serving biased decision-makers as the moral encounters of the distributive problems. Formal impartiality is defined as follows : if the distribution is choosen impartially, its solution does not depend on which specific moral encounter faces the problem. In order to test this definition, I conduct a stated-preferences questionnaire with as many variants as the number of moral encounters. I thus see whether the results obtained in each variant are significantly different or not. The study was carried out in two different countries, India and France. Conducting a cross-countries comparison allows us to see whether this definition of impartiality is culture-specific or rather general. Four distributional situations are considered and some principles of justice which may motivate the entitlement decision are used.

The results of the questionnaire point out that the distributional decisions are taken impartially, and there is no country-dependency as concerns the degree of impartiality. However, we could observe different patterns of preferences in the two countries, namely different principles of justice were deemed as relevant. In addition we found that distributive solutions vary with the specific distributive problem considered.

1 Introduction

Scarcity of resources gives rise to one of the most common situation of conflicting interests. The question is then how to regulate such conflicts of interest and how to put in balance different demands of individuals. Theories of distributive justice provide a comprehensive framework for addressing the issue of distributing resources, and propose solutions for distributive problems. Some of these theories insist on the conditions under which distributive decisions should take place and, more in particular, some of them maintain that a specification of these conditions has to be made out in terms of impartiality. The most known specification of impartial condition of judgements is given by the Rawls' veil of ignorance and the original position from which members of the well-ordered society must derive principles of justice (Rawls, 1971). Rawls maintains that the moral rightness of a distributive solution requires that parties choose principles of justice from an equal position. Along this view, factors of inequality related to the social contingences or to the distribution of the talents are morally arbitrary and, as such, they should not translate into the choice of the principles of justice. Barry (1989) builds on impartiality to distinguish between two main groups of the distributive justice theories. According to him, theories of justice as impartiality should be opposed to theories of justice as a fair division. For, the first kind of theories the distributive decision should not reflect the parties' decisional power, while the second kind of theories allows for such a possibility. This distinction captures a very simple though strong idea : there are some cases where we may want that the identity of the claimant matters for deciding about whom has to prevail over the others, but there are some situations such that the specific point of view from which individuals take a decision should not affect to any extent the content of the decision.

In this paper I rely on a similar distinction to see whether the individuals' views of justice endorse the conception of justice as impartiality. For that, I will provide a specific interpretation of impartiality which I describe in turn.

Consider a situation where a number of individuals has a legitimate demand towards a given amount of resources or towards an indivisible good, these individuals will be called henceforth the claimants. Two external figures take part in the distributional process: an arbitrator and an observer. The arbitrator intervenes to take and implement the decision. The observer ratifies the decision, deciding upon the rightness of it. According to this hypothetical distributions of roles, agents have a variable interest in the final outcome of the decision. Claimants obtain the highest satisfaction when their own demand is acknowledged and met by a corresponding entitlement. The arbitrator carries out the distribution without bearing the direct consequences of it; however, he feels morally responsible of this choice or is deemed so by claimants. Finally, the observer has to be thought of as only concerned with taking the right distributive decision. The question raised is : *how* parties should sort out the problem ?

Justice as impartiality would suggest that agents should not take advantage of their specific position in the distributional situation. For instance, acting along the lines of impartiality will prevent a self-interested claimant to choose

according to the position he is occupying, which means that this claimant will not defend this specific claim only on the ground that it is *his own* claim.

Justice as partiality would find reasonable that a claimant put forward his *particular* position and might benefit from it. For sake of simplicity, I will respectively refer to these two views as *choosing impartially* and *choosing partially.*

Clearly, the question comes down to the following : do we find legitimate those situations where the asymmetry of the parties in the distributional procedure affect its outcome ? This paper addresses this question through a simple experiment.

For assessing whether individuals choose impartially or partially, I conduct a stated-preferences questionnaire. The goal of the questionnaire is to see if people's view of justice are expressed with an impartial attitude or not. The opinions will thus be studied in order to ascertain to what extent the particular perspective of judgement from which the respondent expresses his own opinion affects the entitlement decision. The test is built as follows.

For the same distribution problem I formulate four variants by varying the perspective of judgement. The perspectives of judgement are given by the four figures participating in the distributive problem: the observer (O), the distributor (D), the anonymous claimant (AC) and the identified claimant (IC). I refer to {O, D, AC, IC} as the moral encounters of the problem. Under impartiality, the moral encounters {O, D, AC and IC} choose the same distribution. The partiality hypothesis says that the role of decision affects the decision itself, and the more one party is concerned by the distribution, the more partially should he behave.

Practically, a split-sample procedure is used and each subsample of respondents is assigned with a different perspective of judgment in the distribution problem (in other words, each variant of the questionnaire correspond to a treatment). The questionnaire consisted of a number of scenarios, making the cases of different intergenerational transfers to be carried out within a family. I used the four principles of distributive justice (Reward, Need, Fitness, External Right) since existing evidence on actual intergenerational transfers show that the four categories of justice fit the motives underlying transfers (altruism, direct reciprocity, indirect reciprocity, dynastic transmission etc.). The questionnaire was surveyed to a sample of French and Indian students. The cross-countries comparison is of interest for investigating the country-specificity of distributional judgements.

Among the main results, I found that distributive judgments are uniform among observers, distributors or claimants, which validates the impartiality hypothesis. The inter-countries analysis showed that the relevant principles of justice are different in France and in India, and that in particular some norms like the overlapping reciprocity are endorsed by the former while the direct reciprocity ones are especially approved by the latter. There is, by contrast, shared support to such principles like desert and fitness.

2 The distributive problem.

In this paper I take into consideration the following kind of distributive problem: one indivisible good (right or obligation) has to be assigned to only one among some competing claimants. Consider the following example given by Sen (1987) and discussed by Moulin (2003). Three children are contending over a flute. A person is asked to decide about whom out of them should be given the flute on the basis of their respective claim. The first boy is known to be the best musician and also the boy who mostly enjoys the music, while the two others are known to be less talented and take less pleasure when they play the flute. The second boy is known to be the most unlucky, the one who has the fewest toys and, more generally, the one who is the least happy in his life. The third boy has made the flute himself from a bamboo stick. The person has to arbitrate between all these claims and to put in balance the reasons of each boy. Sen insists on the fact that, whenever the arbitrator ignores the demand of any two of the three children, he will agree to assign the flute to the boy whose claim is known since all the three claims have a ground. More difficult is the case when the arbitrator is provided information about the three boys' demands and he has to establish a priority between them. The example is discussed by Sen to make the point that, in some circumstances, the incomplete information makes easier the moral dilemma[1].

In what follows I will consider similar distributive problems. Moreover, I will make use of the idea of different perspectives of judgement for evaluating the legitimacy of claims and deciding to whom to assign the good. In contrast to Sen's example, I will assume that the assignment decision occurs in a context where the demands are known simultaneously and equally well.

The goal is to see whether individuals are able to take an impartial judgment when they happen to occupy different perspectives in the distributive problem they are faced with. The sense given to impartial judgment is twofold. First, impartiality is explored in its *formal* interpretation, which is that the perspective of judgment is *not a relevant factor* for the decision at issue. Second, the *substantial* interpretation of impartiality[2] means to put in balance the different claims, and to judge upon their respective legitimacy.

Substantive impartiality is better known as "equal treatment of equals and unequal treatment of unequals". Besides its literal interpretation, the proposition has to be taken as a normative statement. It relies on a list of traits about which people are deemed equals if they are to be treated equally. It can be

[1] Ranking based on limited information proceeds by permissive steps (basically, keep orderings which are consistent with some criteria and never contradicted by others).

[2] It must be noted that this is a particular definition of substantial impartiality focusing on equality (see Impartiality in [16]). Deontological moral theories and Consequential moral theories have their own conception of substantive impartiality, which are extremely different from the notion used in this paper.

referred to cases where claims, though not equal in objective terms, are considered as being so. For instance, in civil laws countries legacy laws impose equal minimal bequests for rightful and illegitimate heirs ; in some countries, social security insurance covers lung cancer, irrespective of the patients being smoker or not (sometimes private health insurance work with the same principle).

Thus the "equal treatment of the equals" statement is of a normative kind, as it requires a moral appreciation on the attributes with respect to which (equality of) treatment has to be judged. The same holds for the complementary proposition : "different claimants must be treated differently", which means that the departure from equality has to be legitimated by some arguments, that is by showing that claims are relevantly different and so deserve a different consideration. It has also been stressed that the different treatment of unequals is not in contradiction with morality. Treating individuals unequally doesn't mean to value some intrinsically more significant than others : "What impartiality seems to require is not that everyone receive equal treatment, but rather that everyone *be treated as an equal* (Dworkin, 1977)". Not only does moral impartiality require, in order to respect the principle of equal worthiness, a normative evaluation of claims, it also requires the evaluation to be of a comparative kind.

2.1 Formal content of Impartiality.

I propose a specification of an impartial choice situation : an impartial choice situation is such that the perspective from which the chooser takes her decision does not affect the outcome of the choice. Consider a distribution problem as defining a choice situation. If individuals are asked to choose a distribution, the perspective from which they make their choice defines a perspective of judgment. Four different perspectives are conceivable : an external observer (O), a distributor (D), a claimant ignoring his specific claim (anonymous claimant, AC), a claimant being aware of her specific claim (identified claimant, IC). I will also refer to the figures judging from these four perspectives as the *moral encounters* of a given distribution problem.

A distributive problem for the moral encounter ν is a problem characterized by the triple $(a_0, \boldsymbol{\tau}, \nu)$, where a_0 is the invisible good to assign, $\boldsymbol{\tau}$ is the list of claimants and ν is the particular perspective from which the moral encounter takes her decision. Claimants are defined as individuals who hold a unique and exclusive claim, and I consider five types of claims (need, desert, fitness, external right and exchange)[3] : $\boldsymbol{\tau} = \{\tau_1, ..\tau_5\}$. The four perspectives of judgments (O, D, AC, IC) provide eight moral encounters : the observer-moral encounter, the distributor-moral encounter, the anonymous claimant-moral encounter and as many identified claimants-moral encounters as the number of claimants, which I refer to as $\nu \in R$, $R = \{\nu_O, \nu_D, \nu_{AC}\} \cup \{\nu_1, ..., \nu_5\}$.

I denote $S\left(a_0, (\tau_1, ..\tau_5), \nu\right)$ the allocation-solution given to the distributive problem by the moral encounter ν.

Here impartiality means that, no matter what the perspective of judgement is, the distributive choice carried out is the same:

Conjecture: If an allocation is chosen impartially, every moral encounter gives the same solution to the distributive problem:

$$S\left(a_0, (\tau_1, ..\tau_5), \nu\right) = S\left(a_0, (\tau_1, ..\tau_5), \nu'\right) \quad \forall\, \nu, \nu' \in R$$

The moral status of such judgements is given by the impersonal standpoint they are expression of. This no-parties disposition is called Impartial.

The natural symmetric hypothesis of (1) is partiality : the perspectives of judgment play a role in determining distributive decisions. The content of partial decisions can be outlined further by taking into account the interest of each moral encounter. All the four moral encounters are somehow involved in the story, though to different extents. The Observer has no material interest in the final outcome of the decision, she represents the judge whose only concern is to take the right decision. I assume that an external observer never chooses partially.[4] The Distributor shares with the Observer the feature of externality (she is not directly bearing the consequences of the decision); at the same time she may be closer to claimants, empathize with them or being subject

[3] These claims and their related principles of justice will be presented in the next section.

[4] Unless she acts strategically (for instance for increasing the odds of re-election). But this would be an additional motive and I simply do not consider it as relevant.

to some indirect effects from allocation. Alternatively, the Distributor can be seen as morally responsible of pleasing and hurting. A Distributor can act partially, whenever the feeling of empathy toward some specific claimant or the indirect consequences for her are high. Finally claimants are the parties who are directly and primarily concerned by the distribution. Obviously, choosing partially means promoting her own claim towards the others.

The experimental test of the conjecture of impartiality is straightforward. I consider some distribution problem and for each of them, I formulate four variants. Each variant presents the distribution problem under the perspective of one of the four moral encounters. Consider as an example the following question that was part of the questionnaire. The distributive problem consists of an inheritance decision (a father who has to bequeath his house to one of his children). The variants are thus specified as follows. The observer's variant frames the distributive problem from O's perspective; the scenario reads: "A father owns a property (a house) that he wants to bequeath to only one of his children." The anonymus claimant's variant frames the problem from AC's perspective : "Your father owns a property (a house) that he wants to bequeath to only one of his children". The distributor and the identified claimant's variant are framed analoguously. Note that in the distributive problems that I considered in the questionnaire there are five claimants, but I made only one treatment (i.e. one variant) for one out of the five identified claimant. So overall I have four treatments (observer, distributor, anonymus claimant and identified claimant).

To summarize : the role of the decision-maker is specified differently in each variant while the rest of the problem remains unchanged, i.e. with the same objective and subjective features of the distribution problem (resources, claimants etc.). The test of impartiality versus partiality consists of checking whether the information provided to respondents about their role affects their choice. The prediction of partiality is that the highest the personal involvement in the story is, the more self-serving biased choices will come out to be.

2.2 Substantive content of impartiality.

In section 2, I mentioned the principle of equal treatment of equals and its complement, the different treatment of unequals. The actual implementation of this principle requires to show that differences among individuals are relevant enough to justify the departure from equality. In this paper I assume that claimants only differ in their demand toward the good; thus, moral claims are the competing motives for deciding how to move from equal treatment.

Claims were chosen with a twofold intention. First, I relied on four extensively discussed principles of distributive justice (Sen, 1987; Moulin, 2003; Young, 1994; Miller, 1992 and 1999; Elster, 1993; Konow, 2003). Second, as I decided to study problems of intergenerational transfers, an appropriate interpretation of principles of justice in this specific context was required. There is a natural fitting between the four distributive justice principles and some common economic motives that explain intergenerational behavior. It was natural then to use the main motives of intergenerational transmission, as these motives correspond to the reasons that individuals may find relevant for setting the distribution problem. Before the detailed presentation of specific motives and of how they articulate with categories of distributive justice, I will briefly describe how positive theories of distributive justice deal with the latter.

The categories of distributive justice that make the case for claims are need, desert, external right and fitness. Need is referred as the idea of providing a basic minimum for standard of living (basic achievements in terms of health, shelter, education etc.), or as the compensation of a variously defined bad situation. The Need principle can also express the lack of internal resources, in Post-Welfarist language, as physical handicaps or lack of talent etc. Desert also receives several interpretations, and sometimes is called as reward or equity. Fitness (also called efficiency) expresses the idea that distribution should be done as to make the best use of the good. External right indicates the idea that in some circumstances rights are already settled (seniority), or there are previous stringent rules which cannot be easily changed in a short temporal lag. Moulin (2003) calls this principle external right, since it has no direct relationship with the claimant himself. In lots of cases, external right can be seen as desert principle, i.e. a property right which is instead strictly related to the claimant. The distinction is relatively loose and for our purpose is not necessary to be discussed further.

I turn now to the joint interpretation of claims in terms of intergenerational motives and principles of justice. In describing motives, I will provide some examples from the questionnaire.

The most known intergenerational motives are altruism (Becker 1991), exchange or strategic motive (Cox 1987, Cigno 1993), purely dynastic motive and overlapping reciprocity (Masson 1999).

When individuals are motivated by altruistic concerns towards their children, transfers aim at equalizing as much as possible parents' and children's well-being; the magnitude of transfers depends on the degree of concern for the heirs, while the form of the transfer depends on the various perspectives of

familiar transmission. Altruistic transfers are usually carried out as investments in children's human capital or as monetary bequests and *inter vivos* gifts to them. The former are supposed to occur when children have enough talent to make education profitable, while the latter work as ex-post buffers whenever children turn out to fare badly (exogenous accident occurred during the children' life; Becker, 1991). Usually, altruistic transmission aims at final equality of well-being (between parents and children and among siblings), this is why unequal transfers towards children are legitimated. The unequal treatment can be thus either envisaged to compensate the *need* of heirs, or to enhance their well-being when they are talented enough to justify an efficient use of resources in their education (*fitness*).

The exchange motive was overspread in ancient times and it is still frequent in modern traditional societies. This form of direct reciprocity consists in exchanging reciprocal cares in everyone's respective period of dependence. A similar formulation of the direct reciprocity motive is the strategical one (Cigno, 1993), for which egoistic parents stipulate a sort of insurance contract for their old days to which children subscribe in order to have access to education or to other wealth. In the sophisticated version of this transmission, transfer results from a choice among risky prospects (over the expected value of both given and received assistance for each child), so that parents decide to bequeath more to a child and less to another if they expect to receive more from the former and less from the latter. Direct reciprocity can assimilated to effort, as the help provided to parents has a cost (financial or in terms of time) .

In contrast to direct reciprocity, indirect or overlapping reciprocity establishes between three generations at least. In the case of descending transfers, parents give to their children either for they have received the same transfer from their own parents or for they want their children to give the same transfer to their descendants in turn. Conversely, ascending transfer is justified either by the fact that they wish to receive the same transfer from their children or since their parents received the same from their own parents in turn.[5] The indirect reciprocity corresponds to a criterion of generational fitness : this is the one maximizing the odds that the generational chain won't be interrupted in a future stage (Laslett and Fishkin, 1992).

[5] Overlapping reciprocity has a very good interpretation in terms of the actual systems of pensions based on mutual solidarity between working people and retirees, since the former pay for the latter because they expect to receive equivalently or at least proportionately by future working people at their retirement.

3 The questionnaire.

The questionnaire uses the vignettes technique (Konow, 2003). It is structured in small scenarios with three to five distributive alternatives suggested as possible solutions to the problem. The format of questions is single-valued response.[6]

I give two examples of questions, and discuss extensively the interpretation of the distributive alternatives in terms of intergenerational norms and principles of distributive justice. The other questions are reported in the Appendix, and have a similar structure.

Question 1.

A father[7] owns a property (a house) that he wants to bequeath to only one of his children. None of the children is looking for somewhere to live, the house cannot be shared and there is no way of partitioning the property. Moreover, the father doesn't want the house to be sold. He inherited it in accordance with the existing family tradition stating that the house is left to the oldest child. The father loves all his children equally and they all equally love him. According to your sense of justice, which child should inherit the house?

- The child who is able to support the father during his old age.
- The child who usually saw to the upkeep of the house.
- The child who had his own children and could bequeath the house to them in turn.
- The worst-off child.
- The oldest child, in accordance with the existing family tradition.

In the inheritance case, the distribution consists in bequeathing a house to one out of five children. The worst-off child is the one with the highest need and at the same time the child whom altruistic parents would support in order to compensate for lack of resources. The better-off child is the claimant that would be entitled to by strategically motivated parents who make use of the transfer as a form of insurance. Note that for this claimant, there is no correspondence with one of the four categories. The child who has mostly taken care of the house is the claimant who has provided the highest effort (highest desert). The child entitled to as a result of an existing dynastic tradition is the claimant with an external right. Finally, the child with his own descendants properly represents the incarnation of the indirect reciprocity (I'll give to you the house for you'll give it to your children tomorrow); he also represents the fitness

[6] Subjects are given the possibility to explain the reasons for their choice.

[7] The framing presented here is the one used for the observer treatment. The distributor treatment is framed "you own a property that you want to bequeath to only one of your children" while the rest of the story remains unchanged. The anonymus claimant's treatment reads : "your father owns a property that he wants to...". Finally, the identified claimant treatment is identically framed to the anonymus claimant treatment; there is, in addition, a sentence stating "you are the child who is able to support the father during his old age".

principle, if one takes the classical utilitarian rule (maximization of well-being for the largest number) or if one considers that fitness means appropriateness of means to their aims (in the inheritance case the aim is to perpetuate the transmission, so that the only possible way to implement it is to pass the house to an "open descendants").

Question 2.

Five children have to come to an agreement about which one of them will take care of the material needs of their aged father, who is no longer able to support himself. The father loves all his children equally and they all love him equally. Since they are unable to take such a decision by themselves, they ask for the advice of family friend who is known for his honesty and sagacity. There are five possible sources of assistance for the father: which one do you think the friend of the family will choose for being the most just ?

- The wealthiest child who has built up his own fortune.
- The child who inherited the father's little shop.
- The child who has his own children (provided that he will be helped financially by his siblings).
- The child who has, up until now , taken the least amount of care of the father
- The oldest child, in accordance with the existing tradition in the family.

In the case of assistance to the old father, the siblings must find an agreement on whom will provide that assistance. The change in the distributive context not only concerns the descending/ascending feature of the transfer but also the content of the distribution, which is no longer a benefit.

The better-off child represents altruism : he is in fact the one who is more likely to make the father as well-off as himself. Altruism corresponds to need though in a "negative" sense, since the better-off of the siblings is the one with less objective needs. The child who took care the least of the father in the past is an example of negative desert (distributive justice would entail here a sort of countercompensation). Overlapping reciprocity is again represented by a child having his own descendants ; this way, the ascending direction of the transfer underlies a slightly different rationale : I'll help you today since I hope my children will help me tomorrow. From a distributive justice point of view, the fact that the father is supported by a child with his own descendants is again related to the fitness principle for the reasons stated above. The child who has received some gifts from the father will take care of him in order to reciprocate those gifts (exchange motives). The existing dynastic tradition applies here as an external right priority for a child, and the interpretation is the same as in the inheritance case.

3.1 Results.

In France, 100 working students at the CNAM (Paris) answered the questionnaire. The Indian sample counts 300 students from three universities in New Delhi.[8]

I start by presenting evidence on the impartiality of judgments. I remind the formal definition of impartiality. Impartiality means that, no matter what the perspectives of judgment is, the distributive judgment is the same. I consider four circumstances of judgments : external observer, distributor, anonymous claimant and identified claimant[9]. In order to test this invariance property, I randomly split the sample in four subgroups, and assigned to each subsample one of the four roles. If subjects' answers are significantly different according to the subgroup they belong to, we can conclude that the role of the judge is relevant for the scope of the distribution.

Figures 1 to 4 report the results for the first two questions in India and in France, namely the distributions of answers obtained under the four different treatments (O, AC, D and IC). Figures 5 and 6 report the pooled (between treatments) distributions for India and France for the first two questions.

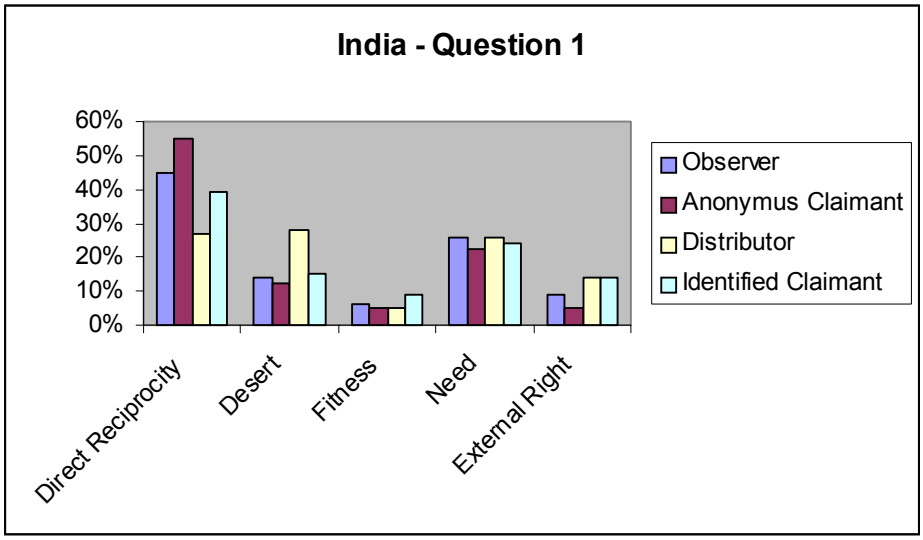

Figure 1

[8] For the whole questionnaire the reader is referred to the Appendix.

[9] As explained in previous sections, there is only one treatment for the identified claimant variant. The corrresponding claims are "Direct Reciprocity" in question 1, "Indirect Reciprocity/Fitness" in question 2, "Desert" in question 3 and "Fitness" in question 4.

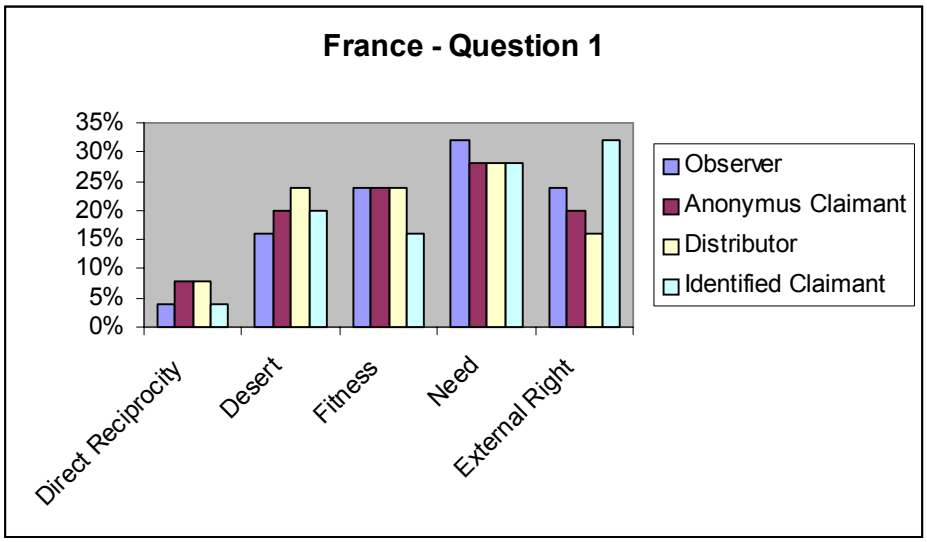

Figure 2

Figures 1 and 2 show the main finding : the four distributions are not significantly different. This is confirmed by a $\chi 2$ test. Figures 3 and 4 report distributions for the question of assistance to the old father. Here the similarity of answers across the four treatments is even more striking. The test of equality of subsamples leads again to a case of no rejection for India. As concerns France, the $\chi 2$ test cannot interpreted due to the zero frequency obtained for one claim. However, the similarity of four distributions can be checked visually (figure 4).

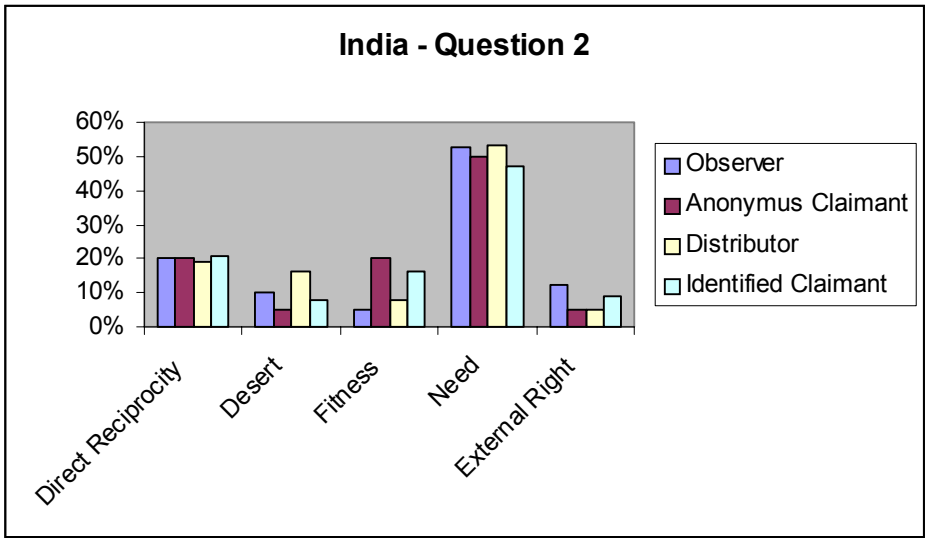

Figure 3

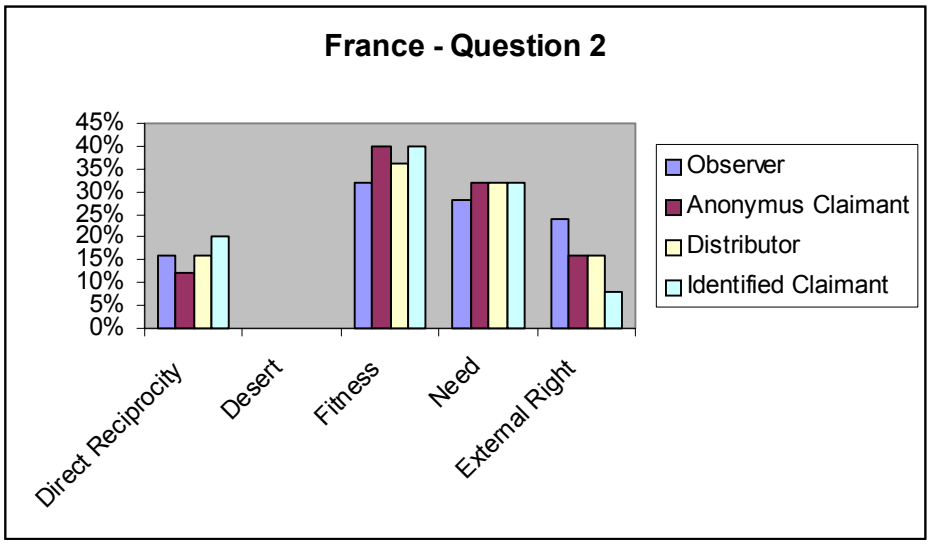

Figure 4

From the inspection of tables 3 and 4, it is possible to draw the same conclusion for questions 3 and 4 (which I will comment in more details later on). Here, I want to stress that the conjecture of impartiality is validated by data : the distributional judgements we observed in both countries can be qualified as impartial.

Third Question (India)				
	Observer	Anonymous Claimant	Distributor	Identified Claimant
Direct Reciprocity	9%	4%	7%	11%
Desert	38%	33%	33%	29%
Fitness	44%	51%	46%	42%
Need	6%	11%	11%	16%
External Right	3%	0	2%	3%

Third Question (France)				
	Observer	Anonymous Claimant	Distributor	Identified Claimant
Direct Reciprocity	4%	4%	4%	4%
Desert	32%	28%	32%	28%
Fitness	44%	52%	52%	48%
Need	16%	12%	8%	16%
External Right	4%	4%	4%	4%

Table 3

Fourth Question (India)				
	Observer	Anonymous Claimant	Distributor	Identified Claimant
Direct Reciprocity	13%	5%	3%	6%
Desert	20%	20%	26%	24%
Fitness	50%	62%	51%	60%
Need	17%	13%	20%	10%

Fourth Question (France)				
	Observer	Anonymous Claimant	Distributor	Identified Claimant
Direct Reciprocity	24%	16%	20%	24%
Desert	48%	40%	36%	56%
Fitness	16%	28%	20%	16%
Need	12%	16%	24%	4%

Table 4

It is worthwhile to look at the inter-countries comparison between judgments. This allows me to discuss in more details the content of data and in particular on how justice is perceived in the context of intergenerational transfers in these two countries. Figures 5 and 6 compares the distribution of pooled observations[10] for India and France. The distributions look quite different. The related $\chi 2$ test points out that the difference is statistically significant for the first question. This diversity holds true in the second question as well[11], as graphics shows. Thus, we may conclude from this preliminary analysis that distributional judgments are different in the two countries.

[10] Averaging over treatments is meaningful on the basis of the previous test, which has prooved that the perspective under which scenarios are formulated does not affect the judgment of people.

[11] For the second question we did run the test, for the reasons stated above about the zero frequency in French sample.

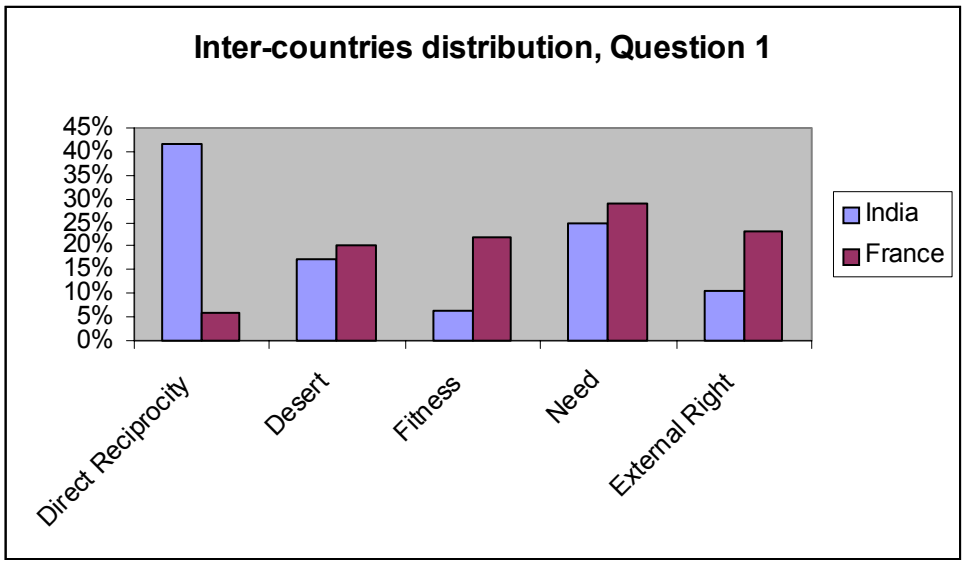

Figure 5

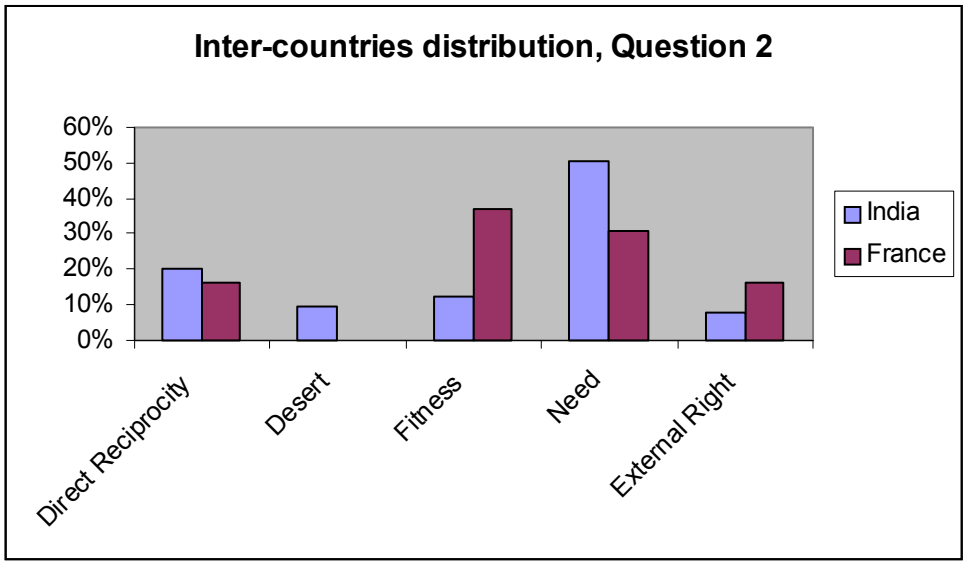

Figure 6

The majority of Indian respondents entitled the child who can take care of the father during his old age, that is the direct reciprocity motive. The second choice was bequeathing the house to the worst-off child, which corresponds to need as principle of justice and altruism as intergenerational motive. A minority considered just to transmit the house to the child having his own heirs (indirect

reciprocity or fitness), while desert and external right claims receive a moderate support.

The distribution of answers of the French sample is more homogeneous : four alternatives out of five are chosen with the same frequency, with a slightly higher preference for the worst-off child. The least popular principle is by far the direct reciprocity one.

The joint reading of Indian and French opinions is instructive. The most approved principle in the former is the least chosen in the latter : the direct reciprocity motive. Such diversity is, however, not surprising and indeed consistent with the actual intergenerational practices in these two countries. The tradition of intra-household solidarity is more developed in India, especially regarding transfers across generations. Also the demo-economic situation is such that the current generation of elderly fare very differently in India and in France. France knew baby-boom and a decrease of births afterwards, and baby-boomers generations experienced high economic prosperity ("trente glorieuses"). India's rates of population growth and GNP growth were typically those of a country in the years of its development. Beyond the economic aspects, cultural factors can explain as well why in India bequests are conceived as a form of insurance over time. India is a country mainly organized in rural communities, where social life is structured around the family home, village and neighborhood ties. France is a western post-modern country, where most of social interactions- even the family ones- are increasingly anonymous; also individual's mobility along the life span makes most of intergenerational relationships occurring from distance.

Evaluation of need and desert principles is homogenous in the two samples, while the indirect reciprocity motive and the external right provide another source of difference between the two countries' perception of justice. Note that the low support that indirect reciprocity motive found in India is a bit contradictory with what was stated above about the intra-household bonds in this country. After all, the logic of transfer is close to the exchange motive since both rely on a strong conception of the family. It is possible that this difference is due to the social stigmatisation arising when one does not comply with the ascending direct reciprocity's norm. In fact one of the reason why helping one's own parents is seen as a compelling duty is that the action is highly recognised at the community level. To our knowledge, no similar effect exists for norms of descending solidarity.

Otherwise, one might expect that a principle like the external right, by definition of a conservative kind, had been chosen more often in a traditionalist country like India than in France. Evidence reveals that this is not the case.

Views of justice turned out to be different in India and in France also in the second scenario. Now it is the French majority's point of view, assistance to the father is owed by the child having his own children, which is among the least chosen alternative in India. Respondents of the latter mainly expressed the belief that the better-off child should take care upon the old father (which is the altruistic norm and the need principle defined in negative terms). A minority of Indian sample was sensitive to the lack of desert. These respondents considered just leaving the care of the father to the undeserving child, which

sounds like a way of sanctioning the child's irresponsible past behavior. The counter-compensation norm found no support in the French sample. Finally, note that, as in the previous scenario, the existing family tradition (external right principle) is a relevant norm for more French respondents than for Indian ones.

The answers to the third question were much more similar between the two countries (the test of $\chi 2$ is such that one cannot rejects the null hypothesis for which these distributions are equal). Most of respondents considered just to entitle the most competent child to the succession of the firm; another large group of individuals rewarded the desert of the child who had previously worked in the family business. Finally, more than one respondent out of ten considered that the entitlement should have benefited to the most needy child, while the external right is unambiguously the least attractive alternative.

In the last scenario we find again some important diversities between India's and France's views about justice. These concern especially the fitness claim and the desert principle, which are the most chosen respectively in the former and in the latter.

3.2 Context-dependency of judgements.

Most of empirical studies on distributional judgements address the question of context-dependance of these judgements[12]. Roughly speaking, this means to analyzed as how much judgements depend on the conditions under which they are obtained. Conditions variously include things like elicitation framework (type of experiment, phrasing of the questions, disclosure of information etc.)[13] or more fundamental aspects like the distribution context at stake (kind of resources, nature of relationship between claimants etc.)[14].

So far I discussed the variety of judgements at the inter-individual level and for each scenario separately. A look at the distributions of answers in the four questions suggests that relevant norms change from a distributional framework to another. However, no systematic direction of change emerges at the average level, neither in India nor in France. It is thus worth identifying the sources of change at the individual level.

To discuss the context-dependance of judgements, we test whether the choice of principles of distributive justice depends on the positive or negative content of the object (advantage or burden) distributed, and more in general with the names of the objects being distributed. Context-dependance is defined as follows: if allocations are context-dependent, they do vary with the nature of the goods allocated. The Mc Nemar test– a test of symmetry between pairs of matched observations– allows to test the context-dependance. We run the test by comparing question 1 and question 2 and by comparing question 2 and question 3. As concerns India, for the first two questions, no general conclusion can be drawn from the test, since we rejected the null hypothesis in the case of observers and distributors, while we had a case of no rejection for the two other roles. This means that respondents who were attributed either the role of the observer or the role of the distributor change opinions from a question to another, while this is not the case for identified claimants and anonymous claimants. When comparing judgments in question 2 and question 3, however, the test clearly indicates that judgment change significantly for all the moral encounters. As concerns France, the null hypothesis was always rejected. We conclude from these tests that judgements are context-dependent.

[12] For an extensive discussion, see Konow (2003).

[13] Typically, the arousal of framing-effects and demand-effects as of other kinds of emotional behavior are analysed and discussed (see Thaler, 1992).

[14] Elster, 1993; Miller, 1992.

4 Conclusions.

Impartiality is usually considered as one of the compelling properties that a distributive decision should endorse. In Normative Theories of Justice, and in particular in the Ideal Observer Theories, the relation between impartiality and morality is made out in terms of an impartial observer, whose moral judgments are not biased or inspired by a particular position. The Ideal Observer Theories have been criticized "for making extraordinary and unreasonable demands on moral agents" (Friedman 1989, Walker 1991). In particular, it has been stressed that impartial judges might be 'too loose moral judges'. The reason is that impartiality as impersonality should not only require him to be disinterested – in the strong sense of being entirely lacking of any particular interest- but also to display "dispassionate" attitudes. According to this criticism, impersonality would translate in indifference. And as far as indifference means lack of motivation, credibility or even practical relevancy (*i.e. real existence of such ideal observers*), impersonal judgements would be questionable. The most extreme criticism comes from the view such that morality should not be defined in terms of impartiality at all, as "an abstract and impersonal evaluator could not possibly make reliable judgments about substantive matters (whether or not he was motivated to), since he would be unable to appreciate the particular concerns of the contesting parties". Young (1990) stresses also that "the idea of impartiality is an idealist fiction. *It is impossible to adopt an unsituated point of view, and if a point of view is situated it cannot stand apart from and understand all points of view.* It is impossible to reason about substantive moral issues without understanding their substance (....); and one has no motive for making moral judgments and resolving moral dilemmas unless the outcome matters, unless has a passionate interest in the outcome."

The aim of this paper was to provide some empirical insights on whether impartial judgements can arise in reality and on how impartiality is understood by normal people. The goal of this exercise is certainly not to set the terms of the dispute between theories of impartiality and partiality. However, as the aforementioned discussion shows, the practical relevancy of theory is a point that arises within the normative theories themselves. Our results indicate that people are able to abstract from the position in which they happen to be, when they are asked to judge about a distributive problem. The implication for theories is simple but instructive : people are able to judge as impartial observers. It seems that, as far as opinions are concerned, the argument addressed to normative theories of impartiality on the ground that human agents would lack the power of abstraction ought to be reconsidered. Indeed, people can express *a not-biased personal* point of view.

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4.1 Appendix.

(Question 1)

A father owns a property (a house) that he wants to bequeath to **only one** of his children. None of the children is looking for somewhere to live, the house cannot be shared and there is no way of partitioning the property. Moreover, the father doesn't want the house to be sold. He inherited it in accordance with the existing family tradition stating that the house is left to the oldest child. The father loves all his children equally and they all equally love him.

According to your sense of justice, *which child should inherit the house?*

1. *The child who is able to support the father during his old age.*
2. *The child who usually saw to the upkeep of the house.*
3. *The child who had his own children and could bequeath the house to them in turn.*
4. *The worst-off child.*
5. *The oldest child, in accordance with the existing family tradition.*

(Circle your choice)
If you want, you can give the reasons for your choice:

.....

.....

(Question 2)
Five children have to come to an agreement about which one of them will take care of the material needs of their aged father, who is no longer able to support himself. The father loves all his children equally and they all love him equally.
Since they are unable to take such a decision by themselves, they ask for the advise of family friend who is known for his honesty and sagacity.

There are five possible sources of assistance for the father: which one do you think the friend of the family will choose **for being the most just ?**

1. *The wealthiest child who has built up his own fortune.*
2. *The child who inherited the father's little shop.*
3. *The child who has his own children (provided that he will be helped financially by his siblings).*
4. *The child who has, up until now , taken the least amount of care of the father*
5. *The oldest child, in accordance with the existing tradition in the family. (5)*

(Circle your choice)
If you want, you can give the reasons for your choice:

.....

.....

.....

Figure 1: Questionnaire (first two questions)

(Question 3)
Mr. Singh is to retire after having been the director of his own company. Before retirement, however, he must make one last decision, namely decide who is to succeed him and direct the company. He is to choose from among his children, but the company's rules permit him to choose only one successor. The father loves all his children equally and they all love him equally.
Consider the following alternatives and, according to your own sense of justice, decide who you think **should** be chosen?

1. *The most competent child (one who has already had other business successes).*
2. *The child has helped the father the most with daily activities unrelated to the company*
3. *The child who has worked for the company for the last few years*
4. *The child who has embarked upon an unlucky business venture and is currently unemployed*
5. *The oldest child, in accordance with the existing family tradition.*

(Circle your choice)
If you want, you can give the reasons for your choice:
.....
.....
.....

(Question 4)
Mr. Gupta has just received a special prize from the firm where he is employed for patenting an industrial device. He decides to use the prize money to pay for a study trip abroad for one of his children. The prize money is only sufficient for one child to go abroad. The father loves all his children equally and they all love him equally.
Consider the following alternatives and, according to your own sense of justice, decide who you think **should** be chosen?

1. *The child who spends his spare time with the father and helps him with everyday life*
2. *The most studious child*
3. *The most talented child*
4. *The least talented child*

(Circle your choice)
If you want, you can give the reasons for your choice:
.....
.....

Figure 2: Questionnaire (second two questions)

Les conséquences de la malchance sont-elles injustes ?*

Romina Boarini

"On défend bien plus férocement sa chance que son droit." (J. Guéhenno)

"[...] il n'y a point de hasard : tout est épreuve ou punition, ou récompense, ou prévoyance." (Voltaire)

1 Introduction.

Il peut sembler paradoxal de vouloir associer la notion du juste à l'opération de la chance, puisque toute définition du juste et toute théorie défendant une vision du juste ont reconnu au préalable le caractère non arbitraire d'un critère, d'une décision ou d'un état des choses justes. Or, si on se tenait à une définition simple de la chance comme fait aléatoire porteur de conséquences plus ou moins favorables pour l'individu, on devrait juger arbitraires les conséquences de cet événement ; les effets de la chance, qu'ils soient bons ou mauvais, mériteraient alors difficilement l'appellatif de justes.

Cependant, l'intuition commune suggère que, parfois, la chance intervient au 'bon' moment pour rétablir le 'juste' ordre des choses. La même intuition nous dit que lorsque deux individus n'ont pas eu la même chance, cela peut être jugé comme une chose plus ou moins juste selon que leurs conditions étaient également bonnes auparavant ou non. On verra dans la chance l'intervention d'un juge réparateur qui inverse les termes d'une situation injuste, si par exemple une personne démunie gagnait un pari contre un individu nanti.

Toutefois, cette intuition recèle une erreur : nous jugeons qu'un fait accidentel est juste sur la base de ce que la situation précédente était. Nous cherchons ainsi le fondement du juste dans les circonstances qui ont précédé ce fait et nous oublions par là le fait lui-même. Nous négligeons, par exemple, l'éventualité que le pari n'ait pas été également voulu par les deux personnes, et qu'il ne pourrait relever que de l'initiative d'une seule d'entre elles. Ainsi, ce pari pourrait être un simple acte ludique ou bien correspondre à un geste extrême, auquel la personne

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démunie aurait été poussée dans un moment de profonde détresse. Enfin, cela pourrait relever d'un acte pervers de l'individu nanti qui veut tirer profit de la faiblesse psychologique de son adversaire. Bref, nous ne sommes pas capables, à défaut d'informations supplémentaires, de dire si le sort a été juste ou injuste.

Cet exemple montre qu'une analyse adéquate des liens entre chance et justice exige une définition normative de la chance, qui ne se limite pas à prendre en compte l'aspect arbitraire de ses manifestations. Ceci est d'autant plus vrai lorsque le cas que nous voulons juger est un cas de chance différentielle, c'est-à-dire une situation où le sort agit différemment à l'égard de deux individus et que notre objectif est de juger si l'inégalité (ou l'égalité) à laquelle l'événement chanceux donne lieu est injuste, juste ou si elle ne relève pas du domaine du juste.

Il convient alors de procéder à un examen ponctuel du fait (que l'on croit) accidentel et de préciser la nature de l'intervention individuelle vis-à-vis de ce fait. En d'autres termes, il devient nécessaire de s'interroger sur la teneur de la responsabilité individuelle, ainsi que de déterminer les effets du jugement de responsabilité. D'une part, l'absence de responsabilité étant appurée, nous nous interrogeons sur le fait qu'il faille ou non compenser le manque de chance. D'autre part, nous devons décider si un cas de responsabilité réclame (ou justifie) la sanction ou le blâme.

Dans ce travail je m'intéresse aux cas où une certaine responsabilité morale est imputable à l'individu qui subit les effets de la malchance. Plus particulièrement, mon objectif est de discuter le rôle de la responsabilité de l'individu dans la prise d'une décision affectant son bien-être et dont les effets sont partiellement imprévisibles ou incontrôlables par cet agent (donc dans le cas où la chance peut intervenir pour altérer ou modifier partiellement le cours des choses après la décision individuelle).

Certaines théories de la justice prétendent qu'une inégalité doit être qualifiée d'injuste seulement si la responsabilité morale des individus n'est pas en cause. Afin de faire la part entre le sort et la responsabilité individuelle, ces théories introduisent le clivage *chance accidentelle et chance intentionnelle*. La chance intentionnelle (ou provoquée) décrit l'issue d'un choix perpétré dans l'incertain (ou dont les conséquences étaient incertaines), que l'agent a délibérément décidé de faire. Elle désigne aussi les situations où l'agent aurait pu éviter de faire un choix risqué, mais où il a volontairement décidé de ne pas l'éviter. La chance accidentelle se réfère à tous les autres faits fortuits qui ne sont pas causés par la volonté ou l'action de l'individu considéré. Ces théories égalitaristes posent en principe que les éventuelles inégalités à laquelle la chance intentionnelle peut donner lieu ne sont pas des inégalités injustes, tandis que les inégalités causées par la chance accidentelle sont injustes et réclament une compensation en faveur des individus malchanceux.

La thèse que je défends dans cet article est que la distinction entre chance accidentelle et chance intentionnelle n'est pas toujours satisfaisante pour décider du caractère injuste de l'inégalité. Mon raisonnement repose sur une discussion préliminaire des arguments théoriques évoqués par les différents courants égalitaristes, et sur l'examen empirique du lien entre ces arguments et les opinions

individuelles. L'examen est réalisé sous forme d'un questionnaire traitant des cas de chance accidentelle et intentionnelle, que les sujets interrogés doivent juger juste ou injuste. Plus précisement, dans les scénarios proposés deux individus font face au même choix - ou à un choix semblable- dans des conditions éventuellement différentes. Il s'agit alors de juger : a) dans quelle mesure les conséquences des choix individuels- lorsque à la fois la volonté individuelle et la chance sont à l'origine des choix ou de leurs conséquences- relèvent de la responsabilité individuelle ; b) s'il faut considérer injustes les effets asymétriques de la chance, lorsque ceux-ci seuls impliquent une différence de bien-être individuel et qu'aucune responsabilité morale n'a été prouvée.

L'article est organisé de la manière suivante. Je commence par une discussion générale des notions de chance et de responsabilité telles que la philosophie et le droit les ont élaboré en relation à l'individu. L'évaluation comparative des choix individuels et de leur circonstances ainsi que le problème de justice distributive que cette évaluation soulève, seront traités à la suite, d'abord par le biais d'une illustration informelle et ensuite au travers de l'examen des théories contemporaines de la justice, et des théories égalitaristes plus en particulier, qui ont insisté sur le clivage entre chance accidentelle et chance intentionnelle.

Dans la deuxième partie, je discute une partie de ces propositions sur la base d'observations expérimentales. La méthode empirique consiste en un questionnaire portant sur les sentiments de justice à l'égard de la chance et de la malchance. Je présenterai en détail les nombreux cas qui ont fait l'objet du questionnaire, ce qui permettra de décliner les arguments critiques soujacents à la distinction entre chance accidentelle et chance intentionnelle et leur importance dans les cas traités.

2 Chance et responsabilité personnelle : quelques aspects introductifs.

Nous proposons de considérer une définition normative de la chance, celle retenue pour une catégorie très proche : le hasard. Selon cette définition le hasard est "ce qui est matériellement indéterminé et moralement non délibéré"[1]. Ainsi, pour que l'événement affectant le sort individuel soit qualifié de chance, la responsabilité de l'individu ne doit pas être en cause. Si quelqu'un tombe d'une fenêtre après s'être penché excessivement, on ne pourra pas dire que cet individu est tombé uniquement parce qu'il n'a pas eu de chance. Son comportement inconsidéré est en grande partie à l'origine de la chute.

Toutefois, si la connaissance de la cause matérielle prélude à l'identification du caractère fortuit ou déterminé d'un fait, la preuve d'un éventuel concours

[1] [8] : 401-410 (Hasard). La définition ci-dessus correspond à l'interprétation objective du hasard. Dans un sens subjectif ou faiblement objectif, la définition proposée est : "Caractère d'un évènement qui touche à notre personne, nos biens, aux intérêts dont nous sommes chargés, mais que nous ne pouvons pas prévoir et que nous n'avons pas voulu ; *en sorte qu'on ne peut nous en faire ni un mérite ni un reproche, même si quelques-unes de nos actions volontaires sont au nombre des causes qui se sont trouvées concourir matériellement à l'effet produit.*"

individuel à la cause du fait n'est pas une preuve de la responsabilité morale de l'individu. Ainsi, même si l'individu est à l'origine d'un événement dont les conséquences lui sont défavorables, on pourra le considérer responsable de sa conduite seulement s'il a délibérément et volontairement décidé de tenir ce comportement.

Le problème d'identification de la responsabilité morale puise son origine philosophique dans la question de l'imputabilité. Parmi les conditions d'imputabilité, on se réfère notamment à la prévisibilité et à l'intentionnalité de l'action individuelle. Nous présentons très brièvement ces notions, selon la perspective classique du droit et de la philosophie. Nous discuterons du sens spécifique des conditions d'imputabilité dans le cadre des théories égalitaristes dans la section 3.2.

D'un point de vue juridique, la responsabilité morale requiert d'abord que l'individu puisse d'être qualifié de "responsable des ses actes" dans un sens général, c'est-à-dire indépendamment de l'action spécifique par rapport à laquelle on cherche à savoir s'il est responsable ou pas. En particulier, être responsable de ses actes signifie avoir des facultés de compréhension et de volition suffisantes pour appréhender les normes en vigueur et être capable de les respecter.

La responsabilité par rapport au fait en question dépend de l'existence d'un *engagement volitif et cognitif minimal*[2] dans ce fait (que ce fait consiste en un acte commis ou en une omission) et dans ses conséquences, à condition que celles-ci soient *intentionnelles,* ou même simplement *prévues* par l'agent. Les actes faits par erreur, ignorance ou imprudence "peuvent parfois être traités par extension de ce critère, lorsque l'erreur, l'ignorance ou l'imprudence sont des *conséquences prévues* d'un acte *intentionnel* précédent"[10][3].

Dans tous les cas, le problème est de fournir une référence objective à la prévisibilité des conséquences ainsi que de donner un contenu plus circonscrit à la notion d'intentionnalité. Le droit utilise la figure de l'homme avisé et prudent, et renvoie au comportement idéal que celui-ci aurait tenu dans les circonstances du comportement que l'on cherche à juger. L'utilisation de cette norme est toutefois nuancée par le droit moderne, dans le souci de tenir compte des caracteristiques individuelles que l'on estime pertinentes pour décider de l'intentionnalité de l'acte (par exemple, le cas d'individus ayant des capacités diminuées).

Le droit traite aussi des actions dont les conséquences sont seulement indi-

[2] "(..) l'engagement volitif minimal étant que son comportement soit un acte (...), l'engagement cognitif minimal étant que l'agent soit conscient de ce qu'il fait.[10]" L'adjectif minimal signifie que l'action ne doit pas être forcement faite de bon gré, ou réellement désirée par l'individu : la légitime défense selon cette notion d'engagement minimal, par exemple, n'exonère pas l'individu de sa responsabilité car il s'agit "d'un cas (où) on agit à contrecoeur, (mais où) on agit malgré tout intentionnellement et dans un but précis, qui est d'éviter qu'autrui réalise le mal dont il nous menace." [10]

[3] La solution consiste en effet à juger si "la négligence ou l'erreur se rattachent causalement à un acte intentionnel antécédent. (...) Cette tentative de relier l'acte d'imprudence à un élément d'intentionnalité, même lointain, prouve à la fois trop et pas assez. Elle prouve trop dans la mesure où il y a toujours moyen d'établir *ex post actu*, pour n'importe quel acte non intentionnel, même pour ceux qui paraissent les plus excusables, un lien avec quelque décision antécédente et elle ne prouve pas assez dans la mesure où la prudence habituelle d'un agent n'excuse pas son imprudence ponctuelle."[10]

rectement intentionnelles. Cette dernière catégorie fait référence aux effets d'une action qui sont prévus ou prévisibles dans une large mesure, mais qui ne sont pas pour autant voulus ou qui dépassent les intentions de l'agent. La position juridique et philosophique à l'égard de ces actes est qu'ils ne relèvent pas d'une catégorie autre que celle des actes aux conséquences directement intentionnelles ou prévisibles. Toutefois, cette assimilation peut se revèler plus difficile à justifier dans les cas où "ces conséquences sont le fait de l'action d'autrui"[10]. Le cas typique est celui où l'individu prend des décisions dans le cadre d'une action collective (politique, productive, scientifique etc.). Dans des telles situations, les conséquences de l'acte individuel peuvent facilement dépasser les intentions de l'agent au départ. En ce qui concerne la notion de prévisibilité, les actes engagés par les autres posent un problème similaire. La aussi, la vision philosophique exprime une tension entre la volonté de sauvegarder le principe d'autonomie du sujet moral et le désir de limiter des actes potentiellement néfastes pour l'individu ou la collectivité.

Si la question de la prévisibilité pose des problèmes de définition qu'il serait hardi de vouloir résoudre en dehors d'un système normatif particulier, on peut néanmoins identifier les critères minimaux que la notion de prévisibilité sous-tend au sein d'un système normatif donné. Parmi ces critères, figurent les élements informationnels qui accompagnent l'action individuelle. Au delà des hypothèses spécifiques, savoir si la prévisibilité est un facteur pertinent pour decider de la résponsabilité individuelle, signifie préciser si les informations dont l'agent disposait ainsi que sa capacité d'élaboration et d'utilisation de ces informations, étaient suffisament bonnes pour qu'il eût pu tenir une conduite alternative.

Selon une vision répandue, la responsabilité morale trouve son fondement ultime dans le libre arbitre[6][10]. Selon cette thèse qui fait du libre arbitre une condition nécessaire à la responsabilité, l'agent est supposé disposer du libre arbitre "s'il introduit une différence dans le monde par ses conduites"[6]. Dans une acception minimale le libre arbitre exige deux éléments : d'une part l'existence de plusieurs options, d'autre part le fait que cet agent et lui seul puisse, par son action, introduire une telle différence. Ce deuxième élément insiste sur la contrôlabilité de l'acte par l'agent, au sens notamment de l'intentionnalité. On peut en effet distinguer deux types de contrôle : un contrôle de direction et un contrôle de régulation. Le premier type de contrôle correspond à la faculté de vouloir se livrer à une action. Le deuxième genre de contrôle se réfère à la possibilité objective de pouvoir réaliser l'acte[4]. Certains auteurs considèrent que seulement le contrôle de direction a un lien avec la responsabilité morale, tandis que le contrôle de régulation ne serait pas pertinent.

[4] L'exemple classique est donné par John Locke : un homme est enfermé dans une pièce sans qu'il ait conscience de l'être. Au cas où il déciderait de rester dans la pièce volontairement, il exercerait un contrôle de direction. Le contrôle de direction serait, dans ce cas, dissocié du contrôle de régulation.

3 Chance accidentelle, chance intentionnelle et inégalités injustes.

3.1 Chance différentielle et inégalité : une illustration.

De cette discussion préliminaire on peut retenir que la chance se définit comme un évenement ayant des conséquences individuelles ni prévisibles ni voulues, et dont l'agent est éventuellement à l'origine matérielle. La notion de chance fait ainsi directement référence à l'action individuelle et indirectement à la responsabilité individuelle.

Dans le cadre des théories de la justice distributive, la chance a été analysée comme un fait accidentel susceptible de déterminer ou affecter les résultats individuels (en termes de niveau de vie, de santé, etc.), et de produire ainsi des inégalités inter-individuelles. Un des point discutés a trait à la question suivante : le résultat inégal de la chance correspond-il à un état des choses plus injuste que l'inégalité causée par un exercice différentiel de la responsabilité individuelle ? Qu'en est-il des cas où le résultat inégal de la chance se mèle à l'exercice différentiel de la responsabilité ? Avant de discuter de ces questions à partir du cadre conceptuel utilisé par les théories égalitaristes, nous présentons un exemple illustratif de la problématique.

Considérons[5] une situation où deux individus sont identiques avant qu'un accident fortuit ne se produise, mais qu'ils cessent de l'être à la suite de cet accident. Prenons le cas de deux individus qui achètent des places pour le même concert mais pour deux dates différentes (disons que le premier individus a pris une place pour le concert du vendredi soir et que le deuxième a acheté une place pour le soir suivant, le samedi). Lors de la représentation du vendredi un orage oblige à suspendre la représentation, tandis que la représentation du samedi peut avoir lieu. S'agissant d'un cas de force majeure, toute interruption ou annulation du concert ne donne lieu à aucun dédommagement, ni au déplacement du spectacle.

Supposons aussi que les billets aient été achetés longtemps à l'avance et que toute prévision météorologique de l'époque ne puisse pas être considérée comme une information pertinente. Acheter un billet pour une date plutôt qu'une autre est un acte librement choisi et voulu par l'individu. Pourtant, puisqu'on ne peut pas imputer à cet acte les conséquences malchanceuses qui l'ont suivi, on considérera l'interruption accidentelle comme un fait de malchance. Devrait-on considérer la situation inégale due à la malchance comme une situation injuste[6] ? Si les organisateurs proposaient à la moitié des spectateurs chanceux - tout ceux

[5] L'exemple est illustré en annexe (diagramme A).

[6] Deux types de réponse sont possibles. Ainsi, s'il est certainement vrai que les individus sont individuellement responsables de leur mauvais ou bon résultat dans la mesure où ils ont décidé d'acheter un billet qui prévoyait en cas de force majeur l'interruption du concert, on peut néanmoins argumenter qu'ils ne sont pas responsables de l'inégalité dans laquelle ils se retrouvent. Bien que l'on reconnaisse l'imputabilité de l'acte au niveau individuel, il reste à montrer que la situation inégale n'est pas injuste. Voir la section finale pour une présentation plus complète de cet argument.

qui peuvent assister au spectacle grâce à des conditions météo favorables- de laisser leur place à la moitié des spectateurs malchanceux, trouverions-nous ce remède juste ?

Supposons maintenant que les spectateurs aient acheté leurs places trois jours avant le concert (un pour le spectacle du vendredi et l'autre pour le spectacle du samedi) et que pour cela ils aient disposé d'une information identique (et également fiable) sur les conditions météorologiques : "forte probabilité d'orage en fin de semaine". Restons d'abord dans le cas où les individus auraient agi de la même manière à l'égard du risque, décidant d'acheter leur billet malgré les informations reçues. Comme dans la situation précédente, le concert du vendredi soir est annulé à cause de l'orage. En revanche, le spectacle du samedi se déroule normalement. Que dirions-nous de la malchance du premier individu et de la chance du deuxième ? D'une part, l'imprudence des deux individus aggrave leur position face au sort et la responsabilité individuelle devient désormais un facteur pertinent pour juger si le résultat individuel est mauvais ou pas. D'autre part, la responsabilité étant identique pour les deux individus, elle ne peut pas être considérée comme le facteur pertinent pour juger du caractère mauvais de l'inégalité. Puisque les deux individus sont identiquement responsables de leur conduite, leur situation inégale est dans un certain sens injuste.

Imaginons un dernier scénario dans lequel les prévisions météorologiques indiquaient du beau temps pour vendredi et un orage pour samedi soir, mais qu'en réalité il ne plut que vendredi. En termes de responsabilité individuelle, ce cas décrit une situation différente de deux précédentes. En effet, la conduite des deux individus trahit une responsabilité différentielle - un individu a agi de façon prévoyante tandis que l'autre a bravé le risque. De plus, le sort agit dans le sens inverse de leur conduite morale, ainsi il est légitime de dire qu'aucun des deux n'a mérité son sort. Le troisième cas est un cas où la responsabilité différentielle est un facteur pertinent, puisque nous considérons que les individus ne sont pas identiquement responsable de leur résultat respectif.

3.2 La vision de la chance accidentelle et de la chance intentionnelle selon les théories égalitaristes.

Les théories égalitaristes de la justice se focalisent sur la distinction entre choix et circonstances, pour identifier les inégalités inter-individuelles que l'on peut de manière légitime considérer comme injustes. La thèse avancée par ces théories est que seulement les inégalités dont les individus ne sont pas responsables seraient injustes. Toutefois, selon les interprétations données à la notion de responsabilité, la proposition égalitariste peut donner lieu à des jugements différents sur l'acceptabilité des inégalités. Il faudra donc étayer davantage le concept de responsabilité et introduire les principes supplémentaires qui permettent d'identifier les inégalités injustes parmi toutes les situations inégales.

Avant de commencer cette discussion, il est opportun de préciser que les théories égalitaristes de la justice traitent généralement de deux problèmes : le problème de la justice distributive et le problème de la compensation. La question de la justice distributive peut se resumer à l'évaluation du caractère juste

ou injuste d'une situation inégale entre deux ou plusieurs individus. La question de la compensation porte sur les modalités et l'intensité de la réparation, que l'on estime nécessaire ou souhaitable afin de rétablir une situation d'égalité (ou de corriger une injustice). Dans ce qui suit nous nous concentrons sur la première question, quelle inégalité est une inégalité injuste, et nous négligeons la deuxième question. Il y a plusieurs raisons à ceci. D'abord, nous nous référons a une idée proprement philosophique, selon laquelle la teneur de la responsabilité individuelle face à un mauvais résultat ne peut pas se juger sur la base de la mise en place éventuelle d'actions correctives. Cet argument reprend la thèse de la séparation entre responsabilité et sanction à laquelle l'on est parvenu au sein du débat sur la responsabilité morale (Rawls, 1955 ; Neuberg, 1996)[7]. Désormais, on reconnaît un statut normatif autonome à la responsabilité, sans qu'il soit nécessaire d'établir en même temps les conséquences (en termes de réparation) auxquelle celle-ci devrait donner lieu. Deuxièmement, la question de la compensation pose de nombreux problèmes, typiquement la métrique pertinente de la compensation (ce que l'on *peut* compenser peut ne pas être comparable avec ce que l'on *devrait* compenser), ainsi que les résultats plus ou moins satisfaisants de cette compensation. Finalement, dans notre questionnaire expérimental nous n'avons pas abordé la question de la compensation. En effet, nous nous avons uniquement cherché à savoir si les inégalités sont perçues comme étant justes ou injustes.

Dans notre étude nous abordons un point précis du débat égalitariste. Il s'agit de discuter de la signification et de la pertinence du clivage entre choix et circonstances dans les situations de choix risqués ou effectués dans l'incertain. Les théories égalitaristes ont traité la malchance comme cas emblématique de situation inégale entre individus, et identifié les circonstances sous lesquelles cette inégalité est susceptible d'être considérée comme injuste.

Bien que la structure générale de ces théories soit éclectique et que leur vision de la chance soit variée, une définition acceptée assez généralement est celle-ci : "Il est mauvais -injuste, inéquitable- que certains individus soient plus mal lotis que d'autres (se trouvent dans une situation économiquement inférieure à celles d'autres individus), si cela n'est pas justifiée par une faute ou un choix de leur part" (Temkin, 1993).

En particulier, au sein des théories égalitaristes le courant dit 'd'égalisation des ressources individuelles' prétend que l'*equalisandum* pertinent entre indivi-

[7] Ce débat était principalement alimenté par les deux visions antagonistes de la responsabilité morale, la vision en termes de justice préventive et la vision en termes de justice rétributive. Reconnaître un statut autonome à la responsabilité par rapport à la sanction permet de reconcilier quelque peu ces deux visions ainsi que de remédier à certaines de leurs faiblesses (Neuberg, 1996). Il faut souligner que cette séparation est acceptée au sein du débat sur responsabilité morale individuelle pour des actes ou pour des omissions. L'évaluation de la responsabilité en termes comparatifs, pourrait ne pas admettre cette séparation. Nous n'approfondissons pas davantage ce point dans la présente contribution. En revanche, la simplification qui consiste à traiter séparamment la question de la justice distributive et la question de la compensation ne pose pas de problème pour discuter la thèse égalitariste qui repose sur le clivage chance accidentelle et chance intentionnelle. En effet, cette thèse répose également sur une évaluation de la responsabilité en termes individuels, ce qui permet de traiter uniquement l'aspect de la justice distributive.

dus est donné par les ressources que ceux-ci ont à leur disposition pour mener une vie convenable et atteindre un certain niveau de bien-être ; plus particulièrement, ces théories mettent en relief la différence entre ressources internes et externes à l'individu, les premières correspondant aux caractéristiques physiques et mentales (les talents, les handicaps, etc.) et les deuxièmes se référant aux ressources matérielles et immatérielles, qui sont transférables (biens, revenus, droits etc). La position du courant 'ressourciste' (Dworkin, 1981 et 2000) à l'égard de la malchance est contenue dans la thèse selon laquelle une situation dans laquelle les ressources sont distribuées inégalement entre des individus pour des raisons imputables à la malchance et non pas à leur action et volonté individuelles, est une situation injuste[8].

Considérons par exemple deux individus à la naissance, dont l'un souffre d'une maladie héréditaire. Il sera alors légitime d'octroyer un transfert en argent (par exemple une prise en charge médicale, ou une pension d'invalidité à titre de compensation pour son handicap). Selon les critères égalitaristes, une réparation serait également à concevoir dans le cas où deux enfants naissent dans des circonstances socio-économiques fort différentes - une famille très riche et une famille très pauvre. Cette réparation devrait aussi prendre la forme d'un transfert monétaire, par exemple sous la forme d'une allocation d'enseignement.

Si le caractère injuste de ces deux types d'inégalité ne paraît pas être en discussion, il est plus difficile de juger quelle compensation est la plus adéquate. En revanche, certaines inégalités sont plus difficiles à juger comme justes ou injustes. Tels sont les cas où les choix individuels intègrent un risque ou produisent des conséquences aléatoires, et donc partiellement imprévisibles par les auteurs de ces choix[9]. Dworkin a traité des situations où les choix individuels sont faits dans des contextes incertains, risqués ou aléatoires en introduisant une distinction majeure entre deux catégories des circonstances hasardeuses : la 'chance accidentelle' (brute luck) et la 'chance intentionnelle' (option luck). Dworkin oppose le caractère fortuit d'un évènement relevant de la chance brute au caractère délibéré et prémédité de la chance intentionnelle. Dans la définition originelle de Dworkin la chance brute est définie de manière complémentaire à la chance intentionnelle[10]. Le concept de chance brute a été discuté par d'autres philosophes qui ont développé davantage les aspects d'inéluctabilité et d'indé-

[8] Un corollaire de cette proposition est que la compensation s'exerce en faveur des individus malchanceux et en défaveur des individus chanceux. En d'autres termes, une redistribution est mise en place entre ces deux groupes d'individus afin d'annuler les effets injustes de la chance. Il est aussi à remarquer que, dans le cas où la distribution inégale concerne des ressources internes, le transfert compensatoire se fera seulement en ressources externes.

[9] Souvent les catégories de l'incertain, du risque et de l'aléa sont confondues ; ici, toutefois, il est opportun de les séparer de manière à qu'il soit possible de traiter spécifiquement les inégalités individuelles auxquelles celles-ci sont associées. Ainsi la première partie de notre raisonnement vise à discuter, pour chacune de ces trois situations, le degré de responsabilité morale imputable à l'individu et, sur cette base, juger si l'inégalité -qui relève d'une de ces trois catégories et de la responsabilité individuelle- est injuste.

[10] "Option luck is a matter of how deliberate and calculated gambles turn out-whether someone gains or loses through accepting an isolated risk he or she should have anticipated and might have declined. Brute luck is a matter of how risks fall out that are not in that sense deliberate gambles"([8]).

pendance du fait de l'agir humain, qui sont propres à la chance brute.

Plusieurs auteurs[11] définissent la chance accidentelle comme relative à tout évènement touchant un individu que celui-ci n'aurait pas pu éviter de façon raisonnable. L'avantage de cette définition (par rapport à l'originelle) est qu'elle sépare la prévisibilité de l'événement de la probabilité que celui-ci se produise. La prévisibilité est à entendre comme la faculté d'anticiper un certain fait, lorsque l'agent dispose d'un nombre convenable d'informations relativement à ce fait. Toutefois, la définition de la chance brute ne repose pas sur le clivage probabilité subjective- probabilité objective ; ainsi, il ne s'agit pas de faire contraster le caractère imparfait ou limité de l'information et de la capacité individuelle de jugement avec celui intrinsèquement exact des probabilités objectives. L'accent est en revanche mis sur l'indépendance d'un fait par rapport à toute interférence possible à son égard[12]. Ainsi, par exemple, un tremblement de terre relève de la malchance car, quel que soit l'état de l'information (publique, scientifique), l'individu ne concourt en rien à sa détermination matérielle[13]. La définition précise surtout que l'indépendance du fait de l'action individuelle se juge selon (un critère de) ce qui apparaît comme raisonnable[14]. Si d'une part il est nécessaire que le fait fortuit ne résulte pas de l'action individuelle, ce n'est pas suffisant pour que ce fait relève de la chance brute. Il faut prouver que l'individu n'était pas en mesure d'éviter (ou même de limiter les conséquences fâcheuses de) la mauvaise chance- et la preuve demandée doit être raisonnable.

Vallentyne[14] élargit la définition précédente de chance brute et identifie des conditions critiques supplémentaires. Dans la définition plus large que cet auteur donne à la chance brute, celle-ci est décrite comme un évenement dont les conséquences ne peuvent pas être prévues à l'avance - de manière raisonnable. Dans une définition plus ponctuelle, l'accent n'est pas mis exclusivement sur la prévisibilité du fait mais sur l'existence de conduites alternatives possibles : ainsi un fait relèverait de la chance accidentelle s'il ne pouvait pas être évité de manière raisonnable. L'existence d'alternatives raisonnables peut être interprétée comme une condition qui laisse à l'action individuelle des marges de liberté

[11] Arneson (1989), Cohen (1989), Otsuka (2002).

[12] Interférence est à entendre ici comme "faculté d'introduire une différence dans le monde". Pouvoir interférer avec un fait signifie pouvoir orienter son propre comportement afin que soit a) le fait ne se produise pas, soit : b) ce fait n'ait pas de conséquences pour la personne. L'exemple donné dans le texte illustre la notion d'interférence : face à un tremblement de terre on ne peut bien évidemment que tenir une conduite qui soit destinée à nous mettre à l'abri des conséquences dangereuses du cataclysme ; on ne peut rien contre le cataclysme lui même.

[13] On remarquera aussi que cette définition assimile le traitement de la malchance dans les cas déterministes et stochastiques.

[14] Ainsi, imaginons que des géologues avaient prévu la date et l'heure exacte d'une secousse et qu'ils avaient diffusé cette information afin d'organiser une évacuation de la population. Si l'évacuation était facilement envisageable (du fait par exemple d'un nombre limité de personnes concernées et d'une logistique d'évacuation économique et efficace), alors on ne pourra pas mettre sur le compte de la malchance brute le cas d'un groupe de citoyens qui, en refusant de quitter leur lieu d'habitation, se trouveraient ensuite accidentés. Imaginons de plus qu'on puisse prévoir avec certitude l'heure du tremblement et qu'il soit possible de donner des instructions précises pour rester indemne (par exemple : se mettre à l'abri dans une cave). Alors, si quelqu'un se retrouve blessé car il n'a délibérément pas suivi ces instructions, son cas ne pourra pas être jugé comme un cas de malchance brute.

plus ou moins importantes. Ainsi, dans une acception moins forte on entend que l'agent avait le choix entre plusieurs actions. La condition plus stricte impose que l'agent aurait pu introduire des modifications du monde autres que celles obtenues dans les faits, tout en ayant la possibilité de choisir son ensemble de conduites possibles au départ. Par ailleurs, on peut insister sur le rapport de l'action individuelle à la chance, qui peut être vu comme un rapport de causalité ou bien comme une simple association. Dans le premier cas, l'action est directement à l'origine d'un fait (même si, évidemment, les effets qu'on pouvait anticiper au départ étaient incertains), tandis que dans le deuxième cas, l'individu doit prendre une décision dont l'issue ne dépend en aucun cas de lui, celle-ci étant totalement régie par le hasard[15]. Enfin, une dernière notion de chance accidentelle proposée pointe le caractère non délibéré de l'action : il faut prouver que l'individu avait une capacité de prévoir les conséquences de l'action et de vouloir les éviter.

En resumant, la proposition de Vallentyne met en avant deux éléments supplémentaires par rapport à celle de Dworkin : premièrement, la prévention d'un fait peut se juger raisonnable s'il existe au moins une conduite alternative et que celle-ci est raisonnable. Deuxièmement, l'individu doit avoir conscience des conséquences déraisonnables de la non prévention ainsi que des conséquences raisonnables de la prévention. Autrement dit, l'acte préventif (et plus généralement, l'acte prudent ou précautionneux) doit être un acte délibéré.

Les contours de la responsabilité morale (vis-à-vis d'un fait hasardeux) étant ainsi établis, la chance intentionnelle participe alors de la dimension libre (au sens de l'existence d'alternatives raisonnables) et volontaire de l'action individuelle. Il convient de s'interroger, à présent, sur la compatibilité entre cette notion de responsabilité et la proposition selon laquelle seule la malchance brute - du fait qu'elle ne relève pas de la responsabilité morale- mérite compensation.

Il y aurait des cas, selon Lippert-Rasmussen[9], où les comportements que les individus tiennent face au risque et à l'incertain n'impliqueraient aucune responsabilité morale, bien qu'il s'agisse de décisions libres et volontaires de leur part. Dans chacun de ces cas, une compensation serait alors requise.

A titre d'exemple, on considère deux individus participant à une loterie et devant choisir un des paris proposés sur la base d'un certain nombre de paramètres (options existantes, informations mises à disposition, attitudes individuelles, etc).

a) Dans une première situation, il s'agit de choisir entre deux loteries, dont une seule est très risquée (avec, par exemple, une faible probabilité de gagner une somme importante d'argent) ; si les individus -confrontés aux mêmes loteries - ne font pas le même choix, alors l'éventuel résultat inégal de la chance - une loterie gagnante et l'autre perdante- ne donne lieu à aucune injustice car il reflète tout simplement l'exercice différentiel de la responsabilité individuelle.

En revanche, si l'ensemble des choix ne comporte au départ que des loteries très risquées- avec des probabilités élevées d'obtenir des résultats très défavo-

[15] Un exemple du premier type est tirer sur quelqu'un sans savoir si la balle atteindra la cible. Un exemple du deuxième type est jouer au casino.

rables (ce qui n'est pas la même définition de loterie risquée que celle donnée précédemment)- alors le choix individuel n'est pas forcément pertinent pour conclure au caractère juste du résultat du pari. Il faut ainsi distinguer deux situations selon que les individus fassent ou non le même choix (et que les états de la nature des loteries choisies ne soient pas les mêmes). Dans le premier cas de figure, l'exercice du choix n'est pas à l'origine de la disparité parmi les individus ; d'autre part, l'absence d'alternatives raisonnablement bonnes implique que le risque ne pouvait pas être évité. Ces deux conditions se combinent donc dans une vision de la chance brute qui est plus large que celles discutées précédemment. Selon cette vision, appelée *The Reasonable Guaranteed Minimum Requirement*, il est légitime de réparer la malchance d'un individu lorsqu'il n'avait que des très mauvaises options de choix. Poussée à l'extrême, cette vision implique qu'en absence d'options certaines -et en cas de résultats tous très défavorables- les individus ne peuvent pas être considérés (comme pleinement) responsables de leur choix[16].

Que se passe-t-il si les individus ne choisissent pas la même loterie ? Il semble raisonnable d'imputer une partie de la mauvaise chance au choix individuel. Plus les choix diffèrent en termes de prise de risque, plus la responsabilité individuelle s'accroît et moins un individu malchanceux aimant le risque pourra réclamer une compensation à posteriori[17].

b) Considérons maintenant les situations où les individus ne sont pas appelés à choisir parmi les mêmes loteries. Comment comparer les choix opérés sur des ensembles d'alternatives différents ? Une condition minimale d'équité est l'égalité des valeurs anticipées des loteries. Cette condition n'est pas suffisante ; il faut, en effet, montrer que les différences en termes de valeur anticipée engendrent (au sens de se reflètent sur) l'inégalité finale. Par exemple, au cas où le tirage serait favorable à l'individu ayant les pires perspectives de gain, l'argument de l'équité ne serait pas pertinent.[18]

c) Le critère de l'égalité des espérances de gain présente aussi un autre inconvénient. En principe, deux loteries qui en moyenne donnent la même chose peuvent avoir des caractéristiques très différentes, en termes de risque et d'options disponibles notamment. Ainsi, par exemple, le meilleur état de la nature possible pour un individu faisant face à la loterie x peut être beaucoup moins bon que le meilleur état de la nature pour l'individu qui participe à la loterie y. D'autre part, deux loteries différentes quant aux profils de risque sont

[16] En réalité, il n'est pas nécessaire de stipuler cette condition dans la forme qui demande la présence d'alternatives certaines. Voir les critères de dominance stochastique du premier et du deuxième ordre.

[17] Il faut donc remarquer que l'absence d'alternatives raisonnablement bonnes n'exclut pas d'emblée la responsabilité individuelle. Lippert-Rasmussen appelle ce principe "Comparable Insufficiency Aversion Requirement"[9].

[18] Selon Lippert-Rasmussen, l'argument de l'équité ne serait également pas pertinent si les caractéristiques des paris étaient telles, ex ante, qu'elles ne justifieraient pas les inégalités finales. Il en serait ainsi, par exemple, si le meilleur état de la nature était le même (en termes de gain et de probabilité) dans les deux loteries. Toutefois, ceci est discutable dans la mesure où les différences qui portent sur les mauvais états de la natures (faibles gains, voire pertes) semblent être d'autant plus gênantes.

difficilement comparables si les individus ne sont pas neutres face au risque.

Sur la base de ces deux dernières objections, Lippert-Rasmussen redéfinit ainsi la chance intentionnelle : "L'inégalité entre deux individus tient à un exercice différent de responsabilité si et seulement si : a) chaque individu prend un risque qu'il aurait pu éviter ; b) les individus font un choix sur le même ensemble d'alternatives incertaines (i.e. loteries avec les mêmes états de la nature et les mêmes probabilités) ou, sinon soit b1) le fait de faire face à des loteries différentes n'explique pas la diversité a posteriori soit b2) les loteries étaient susceptibles d'être également bonnes pour les deux individus- ce qui revient à dire, égale espérance de gain si les individus sont neutres au risque, ou une loterie avec équivalent certain plus élevé pour un individu hostile au risque ; et c) les réalisations des états de la nature sont différentes pour les individus - i.e. il y a au moins un individu malchanceux.

d) Enfin, il est nécessaire de discuter de l'exercice de la responsabilité individuelle en relation avec la nature de l'incertain. Quelles probabilités sont pertinentes pour comparer les choix risqués auxquels les individus font face ? Les croyances et les informations décrivant une issue incertaine sont répertoriées de manière schématique en trois catégories de probabilité : 1) Les probabilités subjectives effectives (c'est-à-dire les croyances individuelles que les individus utilisent de fait dans la prise de décision) ; 2) Les probabilités subjectives idéales (elles correspondent aux croyances d'individus rationnels-au sens de la théorie de la décision) ; 3) Les probabilités objectives (c'est-à-dire qui sont indépendantes de toute connaissance individuelle : lois naturelles ou déterministes)[19].

Or, dans le cas où les probabilités subjectives diffèrent pour des raisons qui ne sont pas directement imputables à l'individu[20], et que la justesse de ces probabilité est déterminante pour le choix engagé par la personne, alors l'inégalité finale semble être injuste.

Vallentyne[14] a également discuté de la compatibilité de la dichotomie chance accidentelle-chance intentionnelle avec les propositions égalitaristes. Selon l'auteur, la démarcation entre chance accidentelle et chance intentionnelle demeure non satisfaisante au vu de la généralisation requise par la théorie, et au vu de son enjeu qui consiste à identifier l'equalisandum pertinent ainsi que le lieu de la juste compensation. Plutôt que d'intervenir pour neutraliser les effets imprévisibles de la chance (quelle que soit sa qualification normative), Vallentyne met en avant le principe d'égalisation de l'ensemble d'opportunités initiales. A la manière de Arneson et Cohen, en effet, Vallentyne estime nécessaire de prendre en considération les opportunités de choix individuel au départ, et les dispositions individuelles à opter pour les diverses voies possibles. Il s'agit alors de comparer des arbres de décision - qui dans ce contexte représentent des vies alternatives- et d'égaliser leur valeur anticipée, dans une perspective donc *ex ante* à tout choix individuel et en particulier à l'éventuelle opération de la chance et de la

[19] Le cas des probabilités objectives est décidément plus complexe à traiter (voir l'auteur pour une discussion) ; puisque les connaissances individuelles ne sont pas pertinentes, nous pouvons négliger à présent cette catégorie.

[20] Cette notion d'imputabilité renvoie au concept de responsabilité morale, telle que nous l'avons discuté sous ses aspects juridiques et philosophiques à la section 2.

malchance.

4 La chance est-elle juste ? Une analyse des sentiments de justice chez les individus.

4.1 Les scénarios proposés.

Afin de tester les intuitions morales des individus en relation à la malchance brute et la chance intentionnelle, nous avons retenu un certain nombre de situations décisionnelles caractérisées par l'incertain et la prise de risque.

Ainsi nous avons formulé des questions sous forme de scénarios traitant de la retraite et des décisions d'épargne individuelle pour les vieux jours. La raison de notre choix est très simple : nous voulions travailler avec un cas où l'attitude individuelle face à l'incertain et au risque correspond bien à la situation stylisée par Dworkin et discutée au sein du débat égalitariste, dans laquelle il est possible de se protéger contre l'éventuelle malchance. L'acte assurantiel étant en principe concevable[21], la catégorie de la chance intentionnelle s'appliquerait selon la vision de Dworkin.

Nous avons construit des scenarios où cette vision est susceptible d'être remise en cause ; nous procédions en quatre parties, afin d'analyser séparément ce qui, dans la décision individuelle, relève des circonstances exogènes, des préférences, des caractéristiques intrinsèquement équitables des options de choix et des croyances individuelles.

La première partie est consacrée à l'étude de situations où le choix individuel se fait dans des circonstances inégales pour des raisons exogènes, qui ne sont pas imputables à l'individu. Dans certaines des situations envisagées, les individus subissent les effets averses de la chance, sans qu'il aient à prendre une position à l'égard du risque. Les autres cas traitent de décisions inégales dépendant de la volonté individuelle dans une mesure variable.

Dans le scénario de base, deux individus adhèrent à un plan d'épargne retraite, pouvant choisir parmi des solutions plus ou moins coûteuses, le niveau des prestations étant proportionnel au montant de la prime payé. La première personne se décide pour l'achat de la police la plus onéreuse, tandis que la deuxième achète la plus économique. Il est demandé aux sujets de juger de l'inégalité entre ces deux personnes, l'inégalité étant entendue comme le montant différent de

[21] La catégorie à laquelle nous faisons référence avec le terme 'acte assurantiel' ne doit pas être confondue bien sûr avec son interprétation littérale. Il ne s'agit pas de voir l'acte d'assurance au sens de la définition donnée par Dworkin dans la décision d'investissement pour ses vieux jours, même si on peut en effet adhérer à un plan d'épargne pour des raisons de prévoyance face à un avenir incertain. Le terme " acte assurantiel " est utilisé en revanche pour indiquer la faculté de circonscrire le risque, de déployer des moyens pour le mesurer et prendre en charge ses conséquences dans la mesure voulue. Dans les scénarios, un acte assurantiel consiste par exemple à opter pour un plan non risqué lorsque l'individu se trouve à choisir parmi des plans d'épargne alternatifs. La notion de malchance qui est alors pertinente désigne un mauvais état de la nature qui se produit et qui, malgré l'éventuel acte assurantiel, conditionne le résultat final de la décision individuelle.)

retraite dont les individus disposeront[22].

Chacune des sept variantes du scénario présente une version partiellement différente de cette histoire, intégrant à chaque fois une information complémentaire (comme par exemple les raisons du choix)[23]. A chaque fois il s'agit de tester l'impact de cette information sur le jugement porté par les personnes interrogées. Le tableau 1 (dans la section suivante) contient les sept variantes ainsi que la fréquence des réponses "juste" et "injuste"[24]. La question (pour le scénario de base ainsi que pour les différentes variantes) était ainsi posée :

Exemple de la première question.		
	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante de Base : A achète un plan qui coûte α, B achète un plan qui coûte β (α< β). A la retraite, A reçoit 40 et B reçoit 75.		
Variante 2 – Traitement médical A achète un plan qui coûte α puisqu'il a du payer un traitement médical , B achète un plan qui coûte β, n'ayant du faire face à aucune dépense semblable (α< β). A la retraite, A reçoit 40 et B reçoit 75.		

La deuxième partie du questionnaire porte sur les différentes attitudes face au risque. Le tableau 2 reporte les huit variantes. Remarquons que les situations proposées dans la deuxième partie du tableau 2 (variantes 5-6) comportent également une prise de risque de la part des individus, mais ont la particularité de proposer une option de payement certain. La vision de la conduite risquée et son jugement en termes de responsabilité sont donc plus extrêmes par rapport aux cas précédents, ou les individus n'avaient aucune chance d'éviter un résultat particulièrement défavorable.

[22] Il est spécifié que les montants de retraite n'ont aucune autre source que le plan d'épargne en question.

[23] La procédure d'enquête a procédé par sous-échantillonage ; ainsi la population des 350 interrogés a été divisée en huit sous-échantillons. Chaque groupe reçoit un format de questionnaire différent, contenant une et une seule version des scénarios (un scénario pour chacune des quatres parties). Les non réponses ont été éliminées.

[24] La version originale du questionnaire, en anglais, utilisait les termes "fair" et "unfair".

Exemple de la deuxième partie du questionnaire		
	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante 1 – A et B peuvent choisir parmi deux plans risqués: - α offrant 100 avec 7 chances sur 10 et 230 avec 3 chances sur 10 - β offrant 96,7 avec 9 chances sur 10 et 520 avec 1 chance sur 10 A choisit α, B choisit β ; α donne 100 et β donne 96,7.		
Variante 5 A et B peuvent choisir parmi deux plans qui donnent tous deux une somme fixe de 100 et diffèrent ainsi : - α donne 40 avec certitude - β donne 75 avec une chance sur deux et 0 avec une chance sur deux A choisit α, B choisit β ; β donne 75. Ainsi A=100+40, B=100+75		

A la différence des scénarios précédents, ce nouveau jeu de situations (question 3) fait l'hypothèse que les ensembles de choix ne sont pas les mêmes pour les individus. Il s'agit donc de voir dans quelle mesure l'inégalité des conditions initiales influence les résultats finaux, lorsque les individus se comportent de la même manière face au risque.

Exemple de la troisième question.		
	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante 1 – A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit α1, B choisit α2; α1 donne 100 et α2 donne 0. A et B reçoivent une pension publique de 100 en complément. A=100+100, B=100		

La quatrième partie du questionnaire traite du rôle des croyances individuelles sur les choix opérés. Dans un premier temps, nous testons l'importance des croyances subjectives quant aux choix responsables que celles-ci entraînent dans une situation décontextualisée. Nous présentons en effet le cas de deux personnes participant à un pari et ayant un certain nombre d'informations sur les chances de le gagner ou de le perdre. Dans un deuxième temps, nous revenons au choix d'épargne-retraite, et les informations données concernent la rentabilité de l'investissement financier.

Exemple de la quatrième question.		
	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante 1 – A et B participent à un pari. Les informations données sur le pari diffèrent pour A et B. A reçoit comme information qu'il a une chance sur deux de gagner 30 et une chance sur deux de perdre 10. B reçoit comme information qu'il a une chance sur quatre de gagner 30 et trois chances sur quatre de perdre 10. En réalité il s'agit du même pari mais l'information donnée à B est fausse. A accepte le pari, B le refuse. A gagne le pari. A=30, B=0		
Variante 5 A peut choisir parmi le plan risqué (α) et un plan offrant un payement certain (x). Le plan x donne 45, tandis que le plan α donne 200 avec une chance sur deux et 40 avec une chance sur deux, selon la performance du marché financier α. B fait face à un choix semblable, pouvant choisir parmi un plan (y) donnant un payement certain de 40 et un plan risqué (β) qui donne 220 avec une chance sur deux et 30 avec une chance sur deux, en fonction de la performance du marché financier β. Les performances passées des marchés α et β ont été bonnes. A choisit α, B choisit β; α donne 200 et β donne 30. A=200, B=30		

4.2 Les sentiments de justice face à la malchance : les résultats.

Les cas de base. De manière générale, la majorité des interrogés considère que les inégalités individuelles découlant de la malchance sont justes (tableau 1). Quelques cas font exception. Voyons cela en commençant par le scénario de base. Il s'agit du cas où deux individus font un choix différent lorsque les conséquences de ce choix sont connues à l'avance et ne sont ni aléatoires, ni soumises à un risque maîtrisable ou évitable individuellement (= acheter un plan qui donnera un bénéfice certain à une date connue).

Environ trois interrogés sur quatre estiment que l'inégalité à laquelle le choix différent a donné lieu est juste. Ceci n'est pas surprenant, et s'accorde avec la vision égalitariste de la responsabilité : dans la mesure où le résultat inégal d'un choix est totalement imputable à ses auteurs[25], il est juste que ceux-ci en supportent les conséquences. En revanche il est plus étonnant de voir que des cas qui relèvent de la malchance brute (vivre plus ou moins longtemps ou être sujets aux revirements de la conjoncture économique), ou qui traitent d'opportunités de choix différentes[26], sont considérés comme justes par plus d'un individu sur deux.

En effet la seule situation qui soit jugée injuste et qui se démarque nettement des autres, concerne le cas d'une personne qui, du fait de sa mauvaise condition de santé, a été contrainte au choix d'épargne le moins intéressant (variante 2). La maladie n'est toutefois pas toujours une circonstance atténuante de la responsabilité individuelle, comme l'indique le fait que dans un scénario similaire (variante 6) où une maladie inattendue empêche un individu de travailler jusqu'à maturation complète de ses droits, la plupart des interrogés ne voient pas un cas d'injustice[27].

La vision de la *malchance brute* qui se dégage n'est pas très conforme aux théories égalitaristes dans la mesure où celles-ci réclameraient une compensation pour un fait accidentel contre lequel l'individu n'a pas pu s'assurer (c'est-à-dire qu'il n'a pas pu tenir une conduite alternative). Or les variantes 5, 6, 7 et 8 relèvent justement de cette typologie. Pourtant, seul un individu sur trois (en moyenne) estime qu'il s'agit d'une inégalité injuste.

[25] Remarquons qu'indiquer les raisons qui sont à l'origine de l'agir différent des individus ne change aucunement les opinions des interrogés. C'est le cas de la variante 2 qui explique que le choix est motivé par une attitude de précaution face à l'avenir.

[26] Tel est le cas traité par la variante 4, où le statut professionnel de l'employé conditionne ses possibilités d'obtenir une retraite plus ou moins importante. Il s'agit bien évidemment d'un cas où la chance ne joue aucun rôle ; en revanche, la responsabilité individuelle est certes plus difficile à évaluer.

[27] La différence de jugement peut tenir au fait que dans un cas il s'agissait d'acheter une assurance plus chère que l'individu malade n'avait tout simplement pas pu se permettre, tandis que dans le deuxième cas la pension était calculée selon un critère d'équité contributive, mais que la maladie s'était aussi traduite dans une absence prolongée du travail. Il y donc un facteur d'effort qui justifierait une rémunération supplémentaire dans ce dernier cas, et qui était absent auparavant.

Tableau 1. Première question.

(Fréquences sur le total des sujets interrogés – les non réponses ont été éliminées)

	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante de Base : A achète un plan qui coûte α, B achète un plan qui coûte β (α< β). A la retraite, A reçoit 40 et B reçoit 75.	**29/37**	**8/37**
Variante 2 – Traitement médical A achète un plan qui coûte α puisqu'il a du payer un traitement médical , B achète un plan qui coûte β, n'ayant du faire face à aucune dépense semblable (α< β). A la retraite, A reçoit 40 et B reçoit 75.	**16/38**	**22/38**
Variante 3 – Epargne de précaution A achète un plan qui coûte α car il n'avait rien épargné au fil des années, B achète un plan qui coûte β ayant constitué une épargne (α< β). A la retraite, A reçoit 40 et B reçoit 75.	**25/33**	**8/33**
Variante 4 –Statut professionel A et B peuvent acheter des plans- épargne, selon leur statut au sein de l'entreprise. A est un employé, B est un chef de département. A a la possibilité d'acheter un plan qui lui rapporte 40 et B un plan lui rapportant 75. A est un simple employé, B est un cadre.	**19/33**	**14/33**
Variante 5 – Performance variable A et B reçoivent payent une certaine somme d'argent à titre de cotisations pour leur retraite. Les prestations dépendent des profits que la société réalise pendant la dernière année de leur activité. Lorsque A prend sa retraite, les bénéfices sont tels qu'il reçoit 40, tandis que pour B sont tels qu'il reçoit 75.	**24/39**	**15/39**
Variante 6 – Equité contributive La retraite est calculée avec une logique de neutralité actuarielle, ainsi les prestations dépendent à la fois des contributions payées et de la durée de cotisation. A et B payent le même montant de cotisation, A cotise 10 ans et B cotise 8 ans car ensuite il tombe malade. A reçoit 180 et B reçoit 140 (tri=4,5%).	**27/45**	**18/45**
Variante 7 – Equité contributive et soutien Même scénario que le 6, mais A et B reçoivent en plus une prime de 100. A reçoit 280 et B 240.	**25/38**	**13/38**
Variante 8 – Espérance de vie La retraite est calculée avec une logique de répartition. Les individus cotisent à la même hauteur et pendant le même nombre d'années. A meurt 5 ans après avoir pris sa retraite, B meurt 10 ans après la cessation de son activité. Au total, A reçoit 150, B reçoit 300.	**37/48**	**11/48**

Préférences pour le risque et malchance intentionnelle. La deuxième partie du questionnaire porte sur l'importance des préférences individuelles quant à la prise de risque. Nous traitons le cas de choix entre deux loteries qui ont la même espérance de gain ; ces deux loteries sont équivalentes du point de vue des opportunités de gains, si les individus sont neutres au risque. Nous faisons l'hypothèse qu'ils ne le sont pas et de façon plus générale qu'ils ont une préférence différente pour le risque. Ces deux individus choisissent donc deux loteries différentes. Nous envisageons tous les états de la nature possibles pour un choix différentiel face au risque (table B- avec par construction : d>c>a>b). Selon la vision qui distingue la chance accidentelle de la chance intentionnelle, le sort auquel les individus s'exposent lorsqu'ils décident d'acheter une loterie risquée, relève d'une chance ou malchance intentionnelle. Ainsi, le résultat inégal auquel le sort donne éventuellement lieu ne devrait pas être injuste.

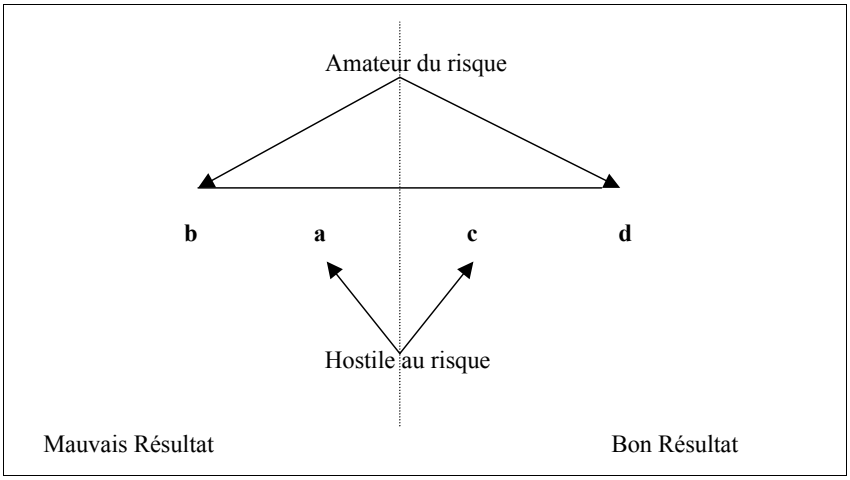

Table B

Tableau 2. Deuxième partie du questionnaire- Braver le risque.		
	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante 1 – A et B peuvent choisir parmi deux plans risqués: - α offrant 100 avec 7 chances sur 10 et 230 avec 3 chances sur 10 - β offrant 96,7 avec 9 chances sur 10 et 520 avec 1 chance sur 10 A choisit α, B choisit β ; α donne 100 et β donne 96,7.	**23/37**	**14/37**
Variante 2 A et B peuvent choisir parmi deux plans risqués: - α offrant 100 avec 7 chances sur 10 et 230 avec 3 chances sur 10 - β offrant 96,7 avec 9 chances sur 10 et 520 avec 1 chance sur 10 A choisit α, B choisit β ; α donne 100 et β donne 520.	**19/38**	**19/38**
Variante 3 A et B peuvent choisir parmi deux plans risqués: - α offrant 100 avec 7 chances sur 10 et 230 avec 3 chances sur 10 - β offrant 96,7 avec 9 chances sur 10 et 520 avec 1 chance sur 10 A choisit α, B choisit β ; α donne 230 et β donne 96,7.	**18/33**	**15/33**
Variante 4 A et B peuvent choisir parmi deux plans risqués: - α offrant 100 avec 7 chances sur 10 et 230 avec 3 chances sur 10 - β offrant 96,7 avec 9 chances sur 10 et 520 avec 1 chance sur 10 A choisit α, B choisit β ; α donne 230 et β donne 520.	**22/33**	**11/33**
Variante 5 A et B peuvent choisir parmi deux plans qui donnent tous deux une somme fixe de 100 et diffèrent ainsi : - α donne 40 avec certitude - β donne 75 avec une chance sur deux et 0 avec une chance sur deux A choisit α, B choisit β ; β donne 75. Ainsi A=100+40, B=100+75	**35/39**	**4/39**
Variante 6 A et B peuvent choisir parmi deux plans qui donnent tous deux une somme fixe de 100 et diffèrent ainsi : - α donne 40 avec certitude - β donne 75 avec une chance sur deux et 0 avec une chance sur deux A choisit α, B choisit β ; β donne 0. Ainsi A=100+40, B=100	**35/45**	**10/45**

Nous constatons dans le tableau 2 que les cas de malchance (intentionnelle) différentielle et les cas de malchance ou chance (intentionnelles) identiques (pour les individus participant aux paris) ne sont pas jugés uniformément en termes de justice. La deuxième situation dans laquelle soit les individus sont tous les deux malchanceux (cas I, résultats (a, b)–variante 1) soit tous les deux chanceux (cas IV, résultats (c,d)–variante 4) est jugée juste par deux individus sur trois. En revanche lorsque la chance agit de façon différentielle, la situation est considérée comme beaucoup plus injuste (un individu sur deux se déclare en ce sens). En particulier, la malchance est considérée comme injuste surtout lorsque c'est l'individu hostile au risque qui en est la victime et que l'amateur du risque est, au contraire, chanceux (cas III, résultats (a,d)–variante 2). Le cas opposé (cas II, résultats (c,b)–variante 3) - individu prudent chanceux et individu imprudent malchanceux- est estimé injuste par un peu moins d'un individus sur deux.

Ce résultat semble indiquer que l'évaluation de l'inégalité n'est pas affectée par le choix opéré par l'individu, tandis que c'est le caractère symétrique ou asymétrique de la chance qui fait la différence en termes de justice.

Une explication possible est que, en cas de chance symétrique, les individus

sont perçus comme étant 'traités' également, même s'ils ne supportent pas des conséquences égales (en cas de malchance commune, l'individu qui a opté pour une loterie moins risquée sera dans une situation meilleure que celui qui a fait un choix plus risqué ; en cas de chance commune, les termes de cette relation sont inversés).

La vision de la responsabilité qui en découle se distingue de l'idée de Dworkin, selon laquelle seul l'individu prudent et malchanceux pourrait avancer une revendication légitime tandis que l'individu imprudent et malchanceux ne le pourrait pas. Or, aux yeux de la moitié des interrogés, il n'y a pas de différence entre agir prudemment et agir imprudemment. Que les individus soient tenus pour responsables de leurs actions ou non, les effets de ces actions sont, dans les jugements donnés, neutralisés par le sort commun.

Ce résultat semble reposer sur une vision de la justice pour laquelle les individus sont libres d'agir et doivent payer le prix de leurs décisions dans l'éventualité où celles-ci se révèlent être mauvaises, mais à condition que le sort n'agisse pas de manière différentielle à leur égard. Cette vision est donc compatible avec une égalisation *ex post* des effets de la chance, sans qu'il soit pertinent de discriminer entre les conduite individuelles (l'acceptabilité de l'inégalité ne dépend donc pas de la nature de la chance et en particulier du caractère fortuit ou provoqué de celle-ci).

Dans la deuxième tranche de variantes (5 et 6), les attitudes inégales face au risque et les conséquences que celles-ci entraînent sont testées de manière plus extrême. En effet, l'individu amateur du risque est le seul qui soit soumis aux effets incertains de la chance, l'autre individu ayant opté pour l'option certaine. Dans la situation où le choix risqué est caractérisé par la malchance (variante 6), deux individus sur trois déclarent que la situation est juste. Mais ce jugement n'est pas différent du cas opposé, où le choix risqué est caractérisé par la bonne chance (variante 5). Par rapport au scénario précédent, la différence principale tient au caractère non différentiel de la malchance. Donc, même si nous sommes dans une configuration équivalente en termes de choix (un choix non risqué vis-à-vis d'un choix risqué), il n'est pas complètement pertinent de comparer les variantes (1-4) avec les (5-6). On peut tout de même avancer une interprétation de ces deux derniers cas, à la lecture des cas précédents.

D'abord, remarquons que les réponses données à ces deux dernières variantes confirment la thèse égalitariste : l'individu qui choisit le risque subit justement les conséquences favorables ou défavorables de son choix.

Ensuite, rappelons les propositions de Lippert-Rasmussen et Vallentyne sur l'existence d'options raisonnablement bonnes et/ou résultats particulièrement défavorables. Ces auteurs affirment que lorsque les conditions de choix ne comportent aucune alternative adéquate, alors la responsabilité individuelle se voit affaiblie. Ainsi un cas de chance (intentionnelle) différentielle serait susceptible de réclamer une réparation car les individus n'auraient pas pu complètement éviter le risque. Or, les variantes (5 et 6) décrivent un scénario où il est possible d'éviter toute espèce de risque, tandis que dans les variantes (1-4) il existe une

chance non nulle d'obtenir un mauvais résultat[28]. Il est donc cohérent de trouver que les cas (5 et 6) soient considérés comme moins injustes.

D'autre part, il se peut que les différences de jugement entre les variantes (5-6) et les variantes (1-4) tiennent au fait que ces dernières traitent la chance comme une somme de deux états de la nature de signe opposé (une chance différentielle). Il semblerait alors que la chance est plus stigmatisée (c'est-à-dire plus souvent considérée comme injuste) lorsqu'elle touche de manière différente les individus, plutôt que quand elle affecte le sort d'un seul d'entre eux.

Responsabilité équivalente pour des opportunités initiales de choix différentes. La troisième partie du questionnaire envisage des situations caractérisées par une disparité en termes d'opportunités initiales de choix. Les deux individus peuvent choisir entre une option risquée et une non risquée, mais les ensembles d'alternatives ne sont pas les mêmes. Nous avons construit le scénario de façon à ce que celui qui se voit offrir le payement certain le plus important ait une option risquée moins intéressante (en termes d'espérance de gain). Par ailleurs nous faisons toujours l'hypothèse que les préférences pour le risque sont homogènes (dans la plupart de ces scénarios, les individus optent pour le choix risqué).

Nous différencions le cas où la retraite individuelle est donnée par les seuls revenus du plan d'épargne et le cas où une pension publique (de valeur égale pour les individus) s'ajoute à de tels revenus. Nous voulons en effet tester si le montant des ressources à disposition de l'individu importe dans le jugement du juste (comme la *sufficiency view* le suppose).

[28] Dans les exemples discutés par ces auteurs, le mauvais résultat correspond souvent à un payement nul, voire négatif. Nous ne traitons pas ce cas extrême.

Tableau 3. Troisième partie du questionnaire- Braver le risque (suite)		
	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante 1 – A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit α1, B choisit α2; α1 donne 100 et α2 donne 0. A et B reçoivent une pension publique de 100 en complément. A=100+100, B=100	**25/37**	**12/37**
Variante 2 A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit α1, B choisit α2; α1 donne 0 et α2 donne 110. A et B reçoivent une pension publique de 100 en complément. A=100, B=100+110	**28/38**	**10/38**
Variante 3 A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit β1, B choisit β2. A et B reçoivent une pension publique de 100 en complément. *A=100+50, B=100+40*	**18/33**	**15/33**
Variante 4 A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit α1, B choisit α2; α1 donne 0 et α2 donne 0. A et B reçoivent une pension publique de 100 en complément. *A=100, B=100*	**21/33**	**12/33**
Variante 5 A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit α1, B choisit α2; α1 donne 100 et α2 donne 0. A=100, B=0	**18/39**	**21/39**
Variante 6 A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit α1, B choisit α2; α1 donne 0 et α2 donne 110. A=0, B=110	**22/38**	**16/38**
Variante 7 A peut choisir parmi le plan risqué (α1) et un plan offrant un payement certain (β1), α1 offrant 100 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 50. B peut choisir parmi le plan risqué (α2) et un plan offrant un payement certain (β2), α2 offrant 110 avec une chance sur deux et zéro avec une chance sur deux, β1 offrant 40. A choisit α1, B choisit α2; α1 donne 100 et α2 donne 110. *A=100, B=110*	**34/48**	**14/48**

Nous constatons que plus de deux individus sur trois ne considèrent pas la malchance comme injuste, que le mauvais état de la nature se produise pour le plan avec gain espéré le plus élevé (variante 1), pour le plan avec gain espéré le plus faible (variante 2), ou pour les deux plans à la fois (variante 4).

En revanche, il n'en est pas de même pour la situation où les individus optent pour l'option certaine et où l'inégalité des payements s'explique uniquement par une différence dans les conditions initiales de choix (variante 3).

Par ailleurs, les jugements des interrogés varient dans le deuxième jeu de variantes, lorsqu'aucune pension publique ne vient compléter les plans d'épargne privés ; cette variation est spécialement remarquable lorsqu'un des individu obtient un paiement nul du fait de la malchance. En effet, le pourcentage de ceux qui jugent cela injuste s'élève sensiblement. L'argument évoqué par la *sufficiency view* est donc validé par cette observation (lorsque la malchance donne lieu à un résultat particulièrement défavorable, on doit en reconnaître le caractère injuste, si les individus ont agi de manière également responsables face au choix).

Pour ce deuxième jeu de variantes, nous avons testé le cas où le meilleur état de la nature se produit pour les deux individus ; la disparité des paiements, qui reflète simplement la différence entre les plans proposés, est considérée comme juste par la plupart des interrogés.

Croyances individuelles et décisions liées à la prise de risque. Enfin, nous avons testé l'importance des croyances sur les choix individuels, d'abord en spécifiant les croyances comme probabilités subjectives (informations privées données aux individus, différentes d'un individu à l'autre mais relatives à la même loterie) et ensuite comme probabilités objectives (informations privées, différentes d'un individu à l'autre parce que relatives à des loteries différentes).

Tableau 4. Troisième partie du questionnaire- Quelles croyances, quelles probabilités ?		
	Inégalité entre (les payements de) A et B est juste.	Inégalité entre (les payements de) A et B est injuste.
Variante 1 – A et B participent à un pari. Les informations données sur le pari diffèrent pour A et B. A reçoit comme information qu'il a une chance sur deux de gagner 30 et une chance sur deux de perdre 10. B reçoit comme information qu'il a une chance sur quatre de gagner 30 et trois chances sur quatre de perdre 10. En réalité il s'agit du même pari mais l'information donnée à B est fausse. A accepte le pari, B le refuse. A gagne le pari. A=30, B=0	**8/37**	**29/37**
Variante 2 A et B participent à un pari. Les informations données sur le pari diffèrent pour A et B. A reçoit comme information qu'il a une chance sur deux de gagner 30 et une chance sur deux de perdre 10. B reçoit comme information qu'il a une chance sur quatre de gagner 30 et trois chances sur quatre de perdre 10. En réalité il s'agit du même pari mais l'information donnée à B est fausse. A accepte le pari, B le refuse. A perd le pari. A=-10, B=0	**23/38**	**15/38**
Variante 3 A et B participent à un pari. Les informations données sur le pari diffèrent pour A et B. A reçoit comme information qu'il a une chance sur deux de gagner 30 et une chance sur deux de perdre 10. B reçoit comme information qu'il a une chance sur quatre de gagner 30 et trois chances sur quatre de perdre 10. En réalité il s'agit du même pari, mais les informations données aux individus sont toutes deux fausses. Les vraies caractéristiques du pari sont : gagner 30 avec une chance sur cinq et perdre 10 avec quatre sur cinq. A accepte le pari, B l refuse. *A gagne le pari. A=30, B=0*	**14/33**	**19/33**
Variante 4 A et B participent à un pari. Les informations données sur le pari diffèrent pour A et B. A reçoit comme information qu'il a une chance sur deux de gagner 30 et une chance sur deux de perdre 10. B reçoit comme information qu'il a une chance sur quatre de gagner 30 et trois chances sur quatre de perdre 10. En réalité il s'agit du même pari, mais les informations données aux individus sont toutes deux fausses. Les vraies caractéristiques du pari sont : gagner 30 avec une chance sur cinq et perdre 10 avec quatre sur cinq. A accepte le pari, B l refuse. *A perd le pari. A=-10, B=0*	**12/33**	**21/33**
Variante 5 A peut choisir parmi le plan risqué (α) et un plan offrant un payement certain (x). Le plan x donne 45, tandis que le plan α donne 200 avec une chance sur deux et 40 avec une chance sur deux, selon la performance du marché financier α. B fait face à un choix semblable, pouvant choisir parmi un plan (y) donnant un payement certain de 40 et un plan risqué (β) qui donne 220 avec une chance sur deux et 30 avec une chance sur deux, en fonction de la performance du marché financier β. Les performances passées des marchés α et β ont été bonnes. A choisit α, B choisit β; α donne 200 et β donne 30. A=200, B=30	**30/39**	**9/39**
Variante 6 A peut choisir parmi le plan risqué (α) et un plan offrant un payement certain (x). Le plan x donne 45, tandis que le plan α donne 200 avec une chance sur deux et 40 avec une chance sur deux, selon la performance du marché financier α. B fait face à un choix semblable, pouvant choisir parmi un plan (y) donnant un payement certain de 40 et un plan risqué (β) qui donne 220 avec une chance sur deux et 30 avec une chance sur deux, en fonction de la performance du marché financier β. Au moment du choix, les deux marchés sont performants. A choisit α, B choisit β. Le marché α produit des bons résultats et donne 200, tandis que le marché β est sujet à un choc négatif et donne 30. A=200, B=30	**30/45**	**15/45**
Variante 7 A peut choisir parmi le plan risqué (α) et un plan offrant un payement certain (x). Le plan x donne 45, tandis que le plan α donne 200 avec une chance sur deux et 40 avec une chance sur deux, selon la performance du marché financier α. B fait face à un choix semblable, pouvant choisir parmi un plan (y) donnant un payement certain de 40 et un plan risqué (β) qui donne 220 avec une chance sur deux et 30 avec une chance sur deux, en fonction de la performance du marché financier β. La performances passée du marché α était bonne tandis que celle de β était mauvaise. A choisit α, B choisit β; α donne 200 et β donne 30. A=200, B=30	**22/48**	**26/48**

Pour le premier groupe de questions, nous traitons d'abord le cas où un seul des deux individus reçoit une fausse information sur les caractéristiques du pari (la probabilité du mauvais état de la nature étant surestimée, l'individu en question ne participe pas au pari). Le jugement des interrogés diffère sensiblement selon que le bon ou le mauvais état de la nature se produisent (et que donc l'individu recevant la fausse information soit respectivement pénalisé ou favorisé par sa mauvaise croyance). Dans le premier cas, plus de 3 individus sur 4 considèrent que l'inégalité à laquelle la différence informationnelle donne lieu est injuste ; ce jugement sous-tend probablement l'idée que recevoir une fausse information est injuste puisque cela empêche de participer à un pari qui s'est révélé gagnant par la suite. En réalité, on peut même dire que recevoir une fausse information est considérée injuste *dans la mesure où* cela empêche de participer à un pari qui se révèle gagnant. En effet, la situation où l'individu bien informé est malchanceux est majoritairement considérée comme juste, ce qui s'explique par le fait que la perte évitée par l'individu qui a reçu la mauvaise information est plutôt considérée comme le résultat de l''intervention' compensatrice de la chance en sa faveur.

Les deux autres variantes constituent des cas où les individus reçoivent tous deux une fausse information, mais qui n'est pas la même[29]. Ceci signifie que, du point de vue des croyances, les individus ne sont pas mis dans des conditions équivalentes de choix - même si par rapport à la situation précédente ils sont tout de même dans une situation 'semblable' qui est de recevoir une information qui n'est pas la bonne et qui les empêche donc potentiellement de prendre une décision en tout état de cause-. Etant données les caractéristiques des paris, un des individus est avantagé (puisque ses probabilités subjectives se rapprochent davantage des vraies probabilités associées à la loterie). Comme dans le scénario précédent, nous considérons les cas où les deux personnes choisissent différemment et où soit l'individu mal informé (qui correspond cette fois à la personne qui reçoit l'information la moins bonne- individu A, variante 3) est chanceux soit l'individu mal informé (variante 4) est malchanceux.

Conformément à ce que l'on observait pour les variantes 1 et 2, une situation où l'issue du pari va dans la même direction que l'avantage informationnel (provoquant une inégalité qui semble amplifier la disparité des conditions initiales) est considérée comme très injuste. Deux individus sur trois, en effet, se prononcent en ce sens dans la variante 4. Le cas où la chance contrebalance la disparité initiale (variante 3) partage les interrogés, mais il est en tout cas jugé plus juste que le cas précédent (variante 4) et moins juste que le premier cas de chance compensatrice (variante 2). Finalement, remarquons que les jugements individuels sont plus homogènes entre les deux dernières situations (variante 3 et 4) qu'entre les deux premières . Cela peut s'expliquer par le fait qu'une fausse information a été donnée aux deux individus et que donc, en quelque sorte, ces deux individus ont été être traités de manière *uniforme* (même si non *identique*).

Enfin, nous avons traité du rôle joué par les croyances individuelles dans

[29] C'est un cas de différence entre les probabilités subjectives et les probabilités objectives : chaque agent s'engage dans un choix en ayant une probabilité qui est différente de la probabilité 'objective'.

une situation de choix contextualisé qui consiste (à nouveau) en l'adhésion à un plan d'épargne-retraite. Dans ce scénario, les individus qui sont face au choix ne sont pas confrontés aux mêmes opportunités puisque les plans proposent des investissements sur deux marchés financiers différents.

Dans la première variante (*variante 5*) l'information donnée aux investisseurs porte sur les performances actuelles des marchés, tandis que dans la deuxième variante (*variante 6*) l'information concerne les performances passées. Dans les deux cas, le type d'information est le même : il s'agit d'une indication qualitative et générique (par exemple : "la performance du marché α était bonne"). Les deux individus se comportent de la même manière, choisissant l'option risquée, et l'issue de l'investissement est, dans les deux variantes, mauvaise pour un seul des deux individus. Dans la deuxième variante on dit de plus que la mauvaise performance des marchés n'était pas prévue[30]. Nous observons que l'inégalité est jugée juste par la plupart des interrogés (trois sur quatre dans la variante 5 et deux sur trois dans la variante 6- il faut probablement imputer cette légère différence au fait d'avoir insisté sur le caractère imprévu de l'issue négative de l'investissement).

Finalement, dans la troisième variante (*variante 7*) les individus reçoivent une information différente (le deuxième est informé de la mauvaise performance passée du marché sur lequel il peut choisir d'investir) mais optent tous deux pour l'investissement risqué. Bien que les avis soient partagé de manière à peu près égale, il y a une propension légèrement plus important à juger cette situation injuste. Du point de vue de la responsabilité individuelle, cette asymétrie d'information ne devrait comporter aucune différence puisque les individus ont en effet reçu la bonne information (c'est-à-dire une information qui s'est trouvée être validée par la véritable performance des marchés), ce qui pourrait appeler un cas juste car les individus étant mis dans des conditions équivalentes de choix, ils n'ont pas exercé de manière semblable leur responsabilité. D'autre part, il se peut que la différence d'opportunités d'investissement initiales conditionne le résultat juste de l'investissement, et qu'on estime injuste que seulement une de deux personnes ait la possibilité d'investir sur un marché performant.

5 Discussion et conclusions.

5.1 Quelles leçons tirer de l'étude des sentiments de justice face à la malchance ?

Les résultats obtenus dans l'étude des sentiments de justice face à la malchance demandent à être mis en perspective et à être reliés aux thèses égalitaristes à partir desquelles nous avons élaboré les différents scénarios.

Nous ne voulions pas, au travers de l'enquête expérimentale, fournir un test empirique des arguments mobilisés par les théories égalitaristes. Nous visions

[30] Nous ajoutons cette phrase : "An unforeseen negative choc results in a sharp drop of the market beta".

en revanche à juger de la conformité des sentiments individuels aux hypothèses sur lesquelles les théories reposent.

Telles étaient nos intentions ; il est temps de récapituler les résultats les plus importants et de les resituer par rapport au débat théorique.

D'abord, les opinions individuelles rendent compte de l'importance de l'existence d'alternatives raisonnablement bonnes, mise en avant par Lippert-Rasmussen et par Vallentyne, ainsi que celui de la sufficiency view (selon lequel un mauvais état de la nature donnant lieu à une situation particulièrement défavorable est injuste). Deuxièmement, les conditions initiales du choix, les croyances individuelles et la qualité des informations qui accompagnent les choix, sont aussi des éléments pertinents pour l'appréciation des inégalités. Finalement, au cas où les individus ont fait des choix différents à partir du même ensemble de choix, le contenu différent du choix ne semble pas avoir des conséquences particulières sur l'évaluation des inégalités dans la mesure où la chance est la même pour ces deux individus. En revanche, les cas de chance différentielle sont considérées comme mauvais, quelle que soit la conduite tenue par les individus.

5.2 Une reformulation des visions égalitaristes de la malchance et de la responsabilité différentielles.

Lorsque l'on veut juger de la responsabilité individuelle vis-à-vis d'une décision ou d'un fait, la question pertinente est la suivante : peut-on imputer le mauvais (ou le bon) résultat final dans lequel l'individu se retrouve à son choix individuel ? L'application du principe de responsabilité à la situation de deux ou plusieurs individus procède d'une logique partiellement différente. Afin de savoir si l'inégalité dont ces individus souffrent découle de leur responsabilité individuelle, ou bien si cela est le résultat d'une chance différentielle, nous posons cette question : les individus ont-ils exercé de manière équivalente leur responsabilité ? Deux interprétations majeures ont émergé au sein du débat égalitariste. Je reformulerai donc la question précédente dans les termes correspondants à ces deux interprétations, et je discuterai leurs implications respectives. La question peut se reformuler ainsi :

(I) Peut-on tenir l'individu responsable de son mauvais résultat final ? (ou autrement, peut-on imputer au choix individuel les mauvais effets de ce choix) ?

(II) Peut-on tenir les individus pour également responsables de leur mauvais résultat individuel, bien qu'ils aient exercé de manière équivalente leur responsabilité ?

La question (I) est considérée comme la question pertinente par ceux qui insistent sur le clivage chance accidentelle et chance intentionnelle, et qui soutiennent que seule la première demande une égalisation compensatrice. Leur question clef est en effet : compte tenu des circonstances particulières dans lesquelles l'individu a agi, aurait-il pu tenir une conduite alternative ? En particulier, aurait-il pu éviter le risque, c'est-à-dire la possibilité d'être soumis aux effets inconnus de la chance ? La réponse à cette question décide du caractère injuste du mauvais résultat final de la décision individuelle. Cette thèse part du même présupposé que celui du principe de responsabilité dans les cas de décision

individuelle, et à aucun moment ne fait de l'inégalité des conditions de choix un élément qui participe à l'appréciation du juste.

La question (II) est posée par les thèses égalitaristes qui mettent l'accent sur l'évaluation de la responsabilité en termes comparatifs, c'est-à-dire en prenant en considération le comportement individuel et en le classant comme plus, moins ou également responsable par rapport à celui d'autrui. Pour ces thèses, la question de la responsabilité se pose au-delà de la sphère individuelle puisqu'il ne s'agit pas seulement d'évaluer si la conduite individuelle a été conforme à certaines normes mais de comparer la 'conformité' des conduites individuelles entre elles.

Selon le sens donné à l'expression "exercice équivalent de la responsabilité", la question (II) aura des significations différentes et aura ainsi des implications variables quant à son enjeu, qui est de délimiter les inégalités injustes. Dans une acception minimale, on se refère uniquement au contenu du choix et l'on peut ou pas mettre en avant une vision de la vie bonne (qui peut vouloir dire : tenir une conduite raisonablement bonne). On peut renoncer à la condition de raisonnabilité, et demander seulement que les choix soient égaux. Finalement, on peut considérer que l'exercice équivalent de la responsabilité doive présupposer les mêmes circonstances de choix (ou des conditions de choix comparables) ainsi que demander que la qualité de ces circonstances soit suffisament bonne pour que le choix puisse se faire de manière responsable.

Ceci induira des jugements à porter sur l'inégalité finale de nature différente. Par exemple, si l'on considère qu'exercice équivalent du choix signifie contenu du choix également méritoire, la seule situation injuste sera celle où les individus ayant fait des choix également prudents, ne sont pas pourtant dans une situation d'égalité du fait d'une chance différentielle. En revanche, si on impose la condition de choix égaux (qu'ils soient méritoires ou pas), alors on trouvera injustes seulement les situations d'inégalité où les individus ont fait le même choix, mais ont eu une chance différente. Si le seul critère est donné par le contenu méritoire du choix, alors le seul cas d'inégalité injuste est donné par la situation où les individus n'ont pas fait le même choix et que celui qui a fait le choix le plus méritoire est malchanceux.

Finalement, si par exercice équivalent de la reponsabilité on entend égales opportunités à faire des choix responsables, on pourra répondre par l'affirmative à question (II) seulement si les projets ont été choisis à partir de conditions permettant des choix responsables. Ces conditions incluent notamment l'information sur les projets risqués et les issues possibles de ces projets. Or, pour que la notion de choix responsable (et donc celle d'exercice équivalent de la responsabilité) soit pertinente pour juger des inégalités, il faudrait adopter des hypothèses fortes quant au contenu des projets risqués (Fleurbaey, 2001), ainsi qu'à leur comparabilité (Lippert-Rasmussen, 2001).

Il nous semble que, même en cas de choix faits à partir de conditions également bonnes, la question (II) peut ne pas admettre une réponse positive. Pour voir cela, reprenons la petite anedocte de la section 3.2, où deux personnes achètent un billet pour un concert et où la chance leur est plus ou moins favorable. Le diagramme A illustre la situation. Dans la petite histoire du concert, nous évaluons aisement les différents états du monde en cas de malchance : qu'il

y-a-t-il de plus injuste que le fait que la personne prudente ne puisse pas assister au concert, tandis que l'imprudent profitera de la musique au clair de lune ?

Il suffit de changer quelque peu cet exemple, pour trouver des cas de choix risqués aux conséquences bien plus sérieuses que l'annulation d'un concert. L'exemple d'un fumeur qui développe un cancer est un cas où l'individu prend certes une décision imprudente, mais est, néamoins, *aussi* victime de malchance. Dans certaines situations, le sentiment que l'individu malchanceux a subi des dommages d'une extrême gravité l'emporte sur l'idée que cet individu aurait *pu* ou *du* agir différement. La question de l'exercice équivalent de la responsabilité se trouve ainsi délimitée par un principe indépendant, qui est celui du besoin.

Il semble alors que, dans de tels cas, on serait amené à donner une réponse négative à la question (II) et que, indépendamment du contenu des choix individuels, tout cas de malchance méritera d'être jugé comme une mauvaise situation.

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6 Annexe

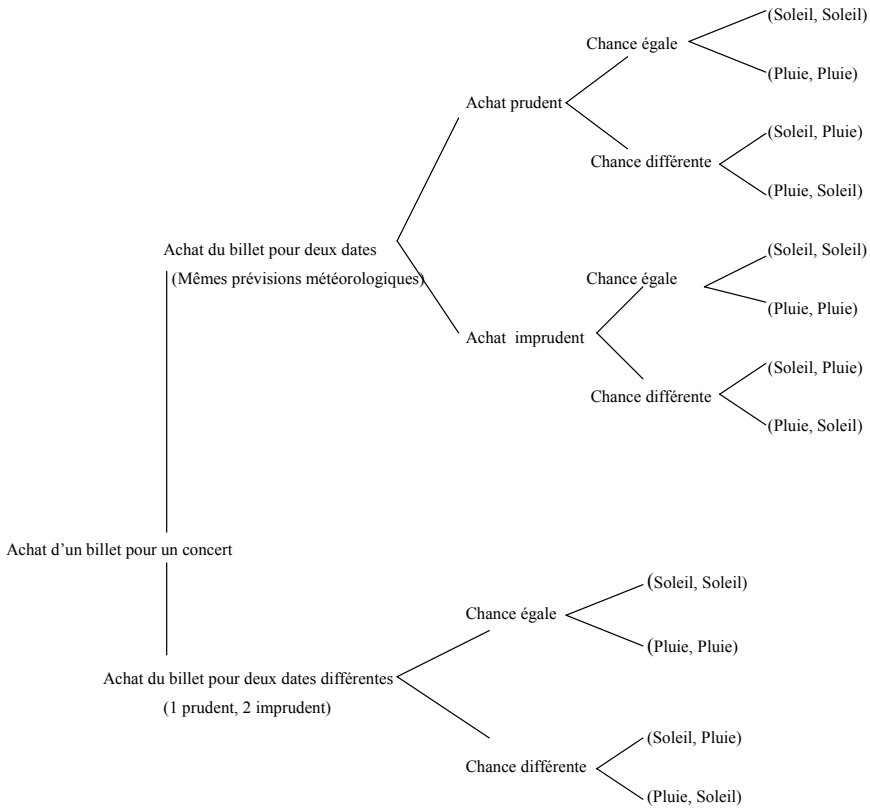

Diagramme A

What do people think is the 'just' distribution of health care?

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Abstract

In this paper we discuss how scarce resources should be allocated in the health care sector according to the four different principles of distributive justice: effort, need, external right and fitness. We conducted a stated-preference survey, so we could both investigate people's views on whether certain personal characteristics should be given a higher or lower priority than others and also rank the four principles of justice in a number of different health care scenarios. The questionnaire was conducted in India. Among the main findings, need claims were identified to be important for setting priorities, irrespective of the specific health context dealt with. Moreover, we found that there was a general trend of giving priority to categories of recipient who have the poorest health status in India. To validate our findings, we formulated and tested several variants of the health distribution problem. The statistical results indicate that the priority settings are robust to changes in scenario, in particular to the severity of illness and to the way in which questions are framed.

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1 Introduction

Ethical considerations are both frequently discussed and stated to be of great importance in the health care sector. A normative question such as how health care resources should be allocated among many potential recipients is raised as a crucial complementary issue for efficiency. On the one hand, public health policy decisions often demand that a judgment is made in terms of equal access to resources, opportunities and actual achievement of well-being. On the other hand, the scarcity of resources may create the need for trading-off between competing interests, irrespective of efficiency or in addition to it. Thus, the question is what principle of distributive justice to apply.

A number of studies using different types of survey methods have shown that individuals' preferences for the distribution of scarce resources in society incorporate principles of justice other than a pure outcome-based utilitarian view. For instance studies like those by Yaari and Bar-Hillel, (1984), Schokkaert and Devooght (1998 and 1999), show that distributive judgments depend on whether the recipients' characteristics are morally arbitrary or not (morally arbitrary attributes refer to attributes for which recipients cannot be held responsible, such as being born deaf or being injured in a natural disaster). Analogously, Anand and Wailoo (2000), Cookson and Dolan (2000), Dolan et al. (1999) show, using a survey on the distribution of health care resources, that preferences for the distribution of resources are affected both by the types of characteristic that motivate people's actions as well as to more innate characteristics such as genetic deficiencies or physical handicaps for which they cannot be held accountable. This contrasts with pure utilitarian theories, which neglect all features other than the utility provided by a certain distribution of goods.

In this paper we specifically focus on the priority method, which can be defined as the entitlement given to one individual over others, due to the fact that her claim is considered to be the most compelling. Young (1994) indicates the advantage of using the priority method: "Priority is an ordinal rather than a cardinal principle because it does not say *how much more* deserving one claimant is compared to another; it simply says that one claimant is more deserving than another." Along these lines, Young argues that there are some cases where received principles of distribution such as the utilitarian principle are not adequate for the distribution problem under study. This is so, for instance, since claimants may vary in multiple ways, and there is no evident criterion that can satisfactorily handle this. This is the case when individuals have heterogeneous claims that are neither cardinally measurable nor comparable at an ordinal level. An example of this is a kidney

transplant, where there are a number of ways of determining fair treatment (such as the time spent waiting, the urgency of the transplant, its effectiveness, the probability of finding a matching kidney) but these approaches are difficult to translate into a common unit of measurement. Furthermore, there is another drawback in using classical principles of justice, such as the utilitarian or the difference principle, when there is an indivisible good to be assigned and when the transformation from an indivisible to a divisible good cannot be done through implementing an *a fortiori* fair procedure such as randomisation (a lottery) and rotation (claimants use the good in turn). The problem with the priority approach is that it does not say which specific claim should be weighted more heavily. As Fleurbaey (1997) observed: "The conflicting ethical principles underlying potential priority rankings are left to the appreciation of expert committees, although this is clearly *where the real equity issues begin*".

In this paper, we want to suggest the following answer. If there is no consensus about how ethical principles should be ranked, then it is clear that the priority approach does not allow us to proceed very far. However, if, there were a shared view on how principles should be ranked, then it would be reasonable to maintain that priority setting can actually be taken as an allocation rule for institutions and agencies that address equity issues in practical terms. Hence, it is an interesting exercise to see to what extent this consensus exists. We thus study individuals' preferences with respect to the priority-setting problem.

It might be objected that individuals' points of view on the question are not relevant for policy-making decisions. One of the reasons could be that people's judgments suffer from too high a degree of variability, for instance that they depend on the specific health problem that is at stake. Another problem could be that judgements are simply not justified from a normative point of view, and that people express preferences which are not ethically grounded. In order to show that the elicitation of individuals' preferences makes sense for designing institutions, it is necessary to provide evidence for both the fact that individuals' judgments are reliable and that they are also normatively justified.

In our study, we analysed these two issues and we proceed as follows. We use a stated-preference survey consisting of two parts. In the first part we investigate whether recipients of health care should be given higher or lower priorities than other people based on their personal characteristics. For this we conduct an exercise similar to the one performed by Cookson and Dolan (2000), Dolan et al. (1999), and in doing so, we consider categories of recipient to whom priority may be assigned (children, the poor, drug-users etc). In order to be able to provide general rules for distribution and priority settings, we investigate whether preferred principles of justice are

context-dependent by investigating whether opinions are invariable with respect to the severity of illness as well as in comparison with allocations being made in the health care sector in general. Moreover, the results should be robust to the wording used for framing questions. In this case we test whether asking people to express preferences for principles directly, or asking them to give a normative ranking, i.e. a hierarchy of principles according to some notion of justice, is important. In the second part of the survey, we formulate some scenarios where individuals waiting for treatment must be ranked. Here we use the taxonomy of need, desert, fitness and external right (Sen 1987, Moulin 2003). Need is defined in terms of the urgency or suffering of the ill individual; desert refers to whether the patient behaves responsibly or not; fitness is measured by the effectiveness of treatment (dependent on the physiological characteristics of the individual); and external right is determined by institutional arrangements or other exogenous circumstances that give priority to an individual – e.g. time spent in the queue). In addition, randomisation was introduced as an option, which consists in assigning to each claimant an equal probability of receiving treatment. We test this ranking again using different cases of severity and a benchmark describing the health sector in general. Moreover, in order to be able to test whether the preferred principles of justice are context-independent, and hence whether it would be possible to generalise these findings and apply them to the health care sector as a whole, we also asked for priority setting in the frameworks of family members and allocation of resources for future research and development in the health care sector.

The questionnaire was conducted in India. Among the main results, the test for invariance with respect to scenario and wording is positive and allows us to conclude that there is consistency in priority-setting across scenarios and respondents. With respect to the scenarios, we observed that ranking of principles is neither sensitive to the severity of disease, nor to the specific wording of questions. Also, when the distributional context varies considerably - for instance from a case of distribution within a family to a case of distribution within society as a whole and involving the well-being of future generations - the principles are ranked in the same way. Need obtains the highest score, while effort has one of the lowest except in those cases where the rule of randomisation is an option. Moreover, we also found that each individual's rankings consistently aggregate into a social ordering, that is, irrespective of the aggregation rule used, the priority of treatment is uniquely established. In the light of our results, two main normative conclusions can be drawn. First, we make a relevant distinction between the responsibility of the individual herself and the responsibility of society in general. These two forms of responsibility are contrasted with the notion of pure chance, that is the occurrence of unavoidable negative events for which neither

the individual nor the society can be held accountable, which affect individuals' opportunities and their final well-being. Secondly, priority of treatment seems to be decided as to compensate the worst-off individuals beyond even their own health status, and entitle them to a higher priority in medical treatment. This fact is also consistent with the high positive correlation between well-being and health status in India and to the fact that categories of people who are badly-off are also the most discriminated against when accessing health care.

The paper is organized as follows. In Section 2 we briefly present some existing studies on priority-setting issues and discuss some principles of distributive justice and their application for the specific issue of health care priorities. We then present the experimental design. Section 3 provides the analyses of the data. Section 4 concludes.

2. Priority setting and survey design

Deciding on how to allocate resources in the health care sector is a crucial issue in most publicly financed health care systems. Today, several countries have developed guidelines for priority-settings[1]. However, very few empirical studies have explicitly concentrated on identifying what individuals think are important personal characteristics in priority-settings. For example Dolan et al. (1999) studied 21 different personal characteristics that could be used for setting priorities. Their study identified both individuals who should have higher priority such as the disabled, elderly citizens, children and individuals with children, but also groups that should be given lower priority, namely those who are responsible for their own poor health status, such as illegal drug users, smokers, heavy drinkers, individuals who rarely exercise and those with an unhealthy diet. Similar results were found by Anand and Wailoo (2000), where respondents indicated that lower priority should be given in cases where individuals are responsible for their own poor health such as contracting HIV/AIDS from using illegal drugs (instead of contracting it from a blood transfusion, for example) and similarly for lung cancer among smokers versus non-smokers.

The problem with these earlier studies is that they do not offer a general position by which ethical principles about the choice of allocation rules must be guided. In order to make the priority-approach feasible, an overall framework for principles is required. This is why we conduct our

[1] In particular, the countries which have the most important tradition in this area are the Netherlands, Finland, Denmark and New Zealand. The state of Oregon in USA has also developed priority-setting. See also Hiesse, Luciolli and Houssin for a scoring system in Europe (2002).

study by making use of a well-known taxonomy of principles. To see why the priority-approach requires a preliminary specification of principles, let us consider the way in which Young presents the priority approach.

A distributive problem is defined as follows: (*a, n*), *a* is the total quantity of good to be distributed and *n* is the number of claimants. Claimants are exclusively defined in terms of their claim[2]). In this context, the priority rule is one of the possible solutions to the distributive problem, that is the rule that entitles at least one individual to one unit of the good[3]. Distributive justice usually relies upon four categories of principle: effort (or desert), need, external right and fitness.[4] If the priority principle is the relevant justice rule, then the definition of the four entitlements reads as follows:

- Effort (Desert): Individuals who supply more effort or who deserve more because they contribute more (to the production of the good), should be given priority in the assignment of the good(s).
- Need: Individuals who are most in need should be given priority in the assignment of the good(s).
- External Right: Individuals who hold an external right (on the good) should be given priority in the assignment of the good(s).
- Fitness: Individuals who can most enjoy (the good) or whose consumption (of the good) produces the greatest enjoyment for the greatest number, should be given priority in the assignment of the good(s).

In relation to the health-care application, this study analyses the four principles of justice in a context-specific way, which we clarify below. The effort principle refers to individuals who behaved more responsibly with respect to their own health status. We tested both the positive and the negative specifications of personal responsibility thus entitling a claimant to a good means either rewarding his/her desert (for instance: individuals who best followed their medical

[2] "The type of a claimant is a complete description of the claimant for the purposes of the allocation, and determines the extent of a claimant's entitlement to the good." (Young, 1994)

[3] The Priority allocation is such that the good is assigned on the basis of the demand of each claimant, as Young (1994) puts it "who has the greatest claim gets the good; the others do not". The priority rule satisfies two properties: impartiality and pair-wise consistency. An allocation rule *F* is impartial if the solution depends only on the claimants' type and the total quantity to be allocated. One consequence is that when the criterion rule is uniquely defined (single-valued) and every claimant is of the same type, then everyone must receive an equal portion. When the rule is not uniquely defined (multipled-valued) and everyone is of the same type, then any way of reassigning the portions among the claimants is also equitable. The allocation rule is pairwise consistent if whenever two individuals of the same type, t and t', share one unit, then they always share it in the same way. The decision does not depend on which claimants are present or how much they get.

[4] See Sen (1987), Moulin (2003),Young (1994). A general discussion is also provided in Konow (2003).

treatments) or sanctioning a lack of desert (for instance: individuals who contracted illnesses as a result of high-risk behaviour).

The principle of need was specified in terms of the greatest discomfort caused by an illness or a disease. This is more in line with the normative interpretation (Wiggins, 1998) of the need variable and is partially different from how some previous studies have dealt with need. For instance, Cookson and Dolan (2000) defined need in terms of the degree of "ill health", with a variously broad content. The narrowest definition associates need with only an immediate threat to life while in the broadest definition the level of enhancement to the quality of life to be gained by an individual from treatment is also considered. While we agreed on the urgency character of need, we did want to mark a distinction between fitness and objective suffering of patients; saving a life and/or improving the conditions of living are in fact concepts which conflate the principles of need and efficiency, without pointing out which one, if any, overrides the other. For the same reasons of transparency, we defined the principle of fitness in the simplest way: that is as priority being given to the patient whose treatment is expected to be the most successful. Finally we considered the time spent in the queue as an example of the external right principle. This is the most usual way of describing this claim.

In the priority approach, "fairness reduces to a procedural question of how to strike an equitable balance between diverse points of view (Young, 1994)". Looking at distributional judgments may shed some light on the way in which this equitable balance is actually conceived at the individual level.

However, this is not enough if different individuals settle the trade-offs in different ways. In fact, to draw practical conclusions from the study of individuals' preferences, we have to make sure that people do in fact agree on priority-setting. For testing the last point, we might be interested in assessing how the final outcome (in terms of priority) depends on the specific aggregation procedure at use. This is indeed an issue we will address in section 3.3 (by testing whether, applying one social preference function rather than another, changes something on the queue of patients). On the other hand, it makes sense to derive a social ordering from individual preferences only to the extent that we trust individual judgments about ethical decisions. The question of the internal validity of what we observe naturally arises. One way of discussing internal validity consists of analysing empirical judgments, discussing their content and their compatibility with theories of just distribution of resources conceptualised by philosophers and economists. Another important point is to see if people's concepts of justice are stable and reliable

or if they are sensitive to the conditions under which they are obtained such as the revelation method, the distributional problem investigated, the sample and all the other factors which may condition the outcome of the experiment. We analysed the context and sample dependency of judgments by implementing various standard tests and by using a procedure based on variants and sample-splitting. Before explaining how these tests were constructed, we present the structure of the survey.

In the first question (see the Appendix for the whole text), we test whether some groups of individuals identified by particular personal characteristics are considered to deserve a higher or lower priority than other groups for receiving treatment. Among these characteristics, we considered those embodied in the person (e.g. nationality, gender), those that describe the individual in relation to other people (e.g. married) and those that describe the individual's health status (e.g. using illegal drugs, exercise). In order to make the reference point clear, we explained that the only feature to differ between the various groups of claimant is the one mentioned[5]. Each respondent was asked to state whether the personal characteristic presented should result in a 'much higher priority than others', 'higher priority than others', no priority' or 'lower priority than others'.

We framed the priority problem using three variants. Two of the versions describe different degrees of severity since either heart transplantation or allergy prevention was the treatment considered. The underlying idea was to test the sensitivity of distributive preferences to the severity of illness. The third version was framed in terms of a general allocation of scarce resources problem. This allows us to test whether priority setting is context dependent with respect to severity. We used a split sample procedure so each respondent was randomly assigned to one of the three scenarios. Furthermore, we studied whether normative framing in the scenario influences the respondent's preferences for priority settings. An 'ethical' judgement is obtained by asking the respondents to set priorities according to their conception of justice. We created a normative framework that reads "select the priority setting that you think is just" while the non-normative framing reads "select the priority setting you prefer". This is a common test (e.g. Frohlic-Oppenheimer, 1992) in this kind of survey and is aimed at comparing a version of the question in which the distribution must be decided simply according to the respondent's preferences, with a version where respondents' judgments are stated as corresponding to their views of justice.

[5] We added this statement to the question: "Only the mentioned feature differs between individuals in the groups".

Each respondent was randomly assigned one of the six scenarios, each scenario consisting of one out of the three variants, and one out of the two framings.

A last remark concerns the way in which we presented the list of claimants to respondents. In designing our questionnaire we only characterised claimants in terms of their particular and exclusive demand (claim) and avoided any additional information, such as their names. This is in direct contrast with various earlier studies (Cookson and Dolan, 2000), in which the scenarios were constructed with explicit references to "precisely identified" individuals, including personal attributes such as their name. However, we wanted to test for the impartiality of priority setting. The principle of impartiality implies equal treatment for equal claimants, and a different treatment provided that claimants are different in some relevant aspect. Thus, to legitimate a departure from equality (in our case, equality means no priority), the source of diversity should be morally unobjectionable.

From a methodological point of view, there is another advantage to be gained from framing the distribution contexts in general terms rather than with named individuals. A general principle in an experiment like this is to keep all effects other than those intended to be investigated constant. The aim of such a procedure is to prevent other factors from being inferred and/or confounded with the variables in the experiment, in other words to eliminate, or at least to reduce, everything that is not controlled by the researcher. Personal identity is clearly not a variable about which we are interested, and thus the best way to handle potential bias[6], is simply not to include it.

In the second question (see Appendix), we focus directly on the four principles of justice, by asking the respondents to rank different claimants for a specific treatment in order of importance. Since each claimant corresponds to a specific principle of justice, prioritising will follow from ranking the categories of effort, need, external right and fitness. In addition, we also included the option that priority setting could be made by randomisation. We used the same six scenarios as in question 1, (i) two different types of treatment and the general health care and (ii) normative and non-normative framing. For example in the heart transplantation version the criteria presented were (i) priority given to those who have led a healthy life such as being a non smoker, taking exercise and avoiding fatty foods (ii) priority given to those who have the highest probability of

[6] Consider, for instance, the Fershtman and Gneezy's study, where an ultimatum game was played as an experiment by revealing the family name of their partners to the participants. The experiment was succesful in showing that an important discrimination is made against the opponents in the game, depending on cultural prejudices about the other. Such 'pro' or 'against' effects are certantly lower in a stated preferences questionnaire, as names of patients are more likely to be witheld from the respodents and the latter will not have to make direct trade-offs between their own welfare and the welfare of recipients. However, one cannot exclude the possibility that names do play a small part in fashioning preferences for distribution. Thus, the most prudent way to handle this problem is not to provide this kind of information at all.

having a positive outcome from the heart transplant (iii) priority given to those who have waited the longest for a heart transplant, (iv) priority based on a lottery and (v) priority given to those who, without a heart transplant, will suffer the greatest discomfort in everyday life because of their heart problems. The respondents were asked to rank these five criteria, but they were also allowed to give the same rank if wanted.

3. Results

3.1 Descriptive analysis of data.

The survey was conducted in Delhi, India, using 300 students from three different universities. The students were recruited by posters on display around the universities. Respondents were randomly assigned to a specific version of the questionnaire. The first question considered whether some personal characteristics should be given priority. We compute the mean rank of each category of claimant for each separate question. The mean rank is simply the average score obtained by assigning 1 to 'much higher priority than others' and 4 to 'lower priority than others'. Table 1 provides these statistics for the three variants of the question. We only report mean ranks of the merged normative and non-normative framing since there were no differences between the two framings.

Table 1. Question 1	**Mean Rank (all versions)**	**Mean Rank (Heart Transplantation)**	**Mean Rank (Allergy prevention)**	**Mean Rank (Access to the Health Sector)**
Married	2,6	2,4	2,6	2,6
Immigrants	2,9	3,1	2,8	2,8
Unemployed	2,4	2,6	2,4	2,1
Disabled	1,8	2,0	1,9	1,5
Sports stars	2,4	2,3	2,3	2,3
Children	1,5	1,5	1,6	1,5
No smokers	2,5	2,3	2,5	2,6
Unhealthy diet	2,8	3,0	3,0	2,6
Key-business people	2,7	2,7	2,6	2,9
The rich	3,1	3,1	3,1	3,2
Individuals suffering from genetic illnesses	2,1	2,5	2,2	1,8
Drug takers	2,8	3,1	3,1	2,4
The elderly	1,9	2,4	1,7	1,6
Heavy drinkers	2,9	3,2	3,2	2,8
Women	2,2	2,2	2,7	2,5
Poorly educated	2,3	2,3	2,5	2,1
The poor	1,9	2,0	1,9	1,9
Those who rarely exercise	3,1	3,1	3,1	3,1
Well-educated	2,7	2,4	2,7	2,8

The mean ranks are roughly homogeneous. For instance, irrespective of which version was used, three claimants obtain a mean rank below 2 and three a mean rank above 3 while the majority of claimants are given a rank in between. Children, disabled and the poor are given the highest priority, while the rich, heavy drinkers and those who exercise rarely are given the lowest priority. However, it has to be noticed that the mean ranks of the various categories are rarely above 3, meaning that claimants are very rarely considered as deserving lower priority than others.

Differences in ranking are more pronounced for variants rather than for the normative/non-normative framing of scenarios. However the global ranking– the queue of claimants - obtained in the two health care situations is not the same (except for the three most highly ranked categories of patients). In fact, mean ranks are only a rough indicator when the number of claimants is high and alternatives are perceived as equally good. It is also likely that rankings ended in a tie due to 'bounded' individual choices, that is because respondents assign a 'local' score to each principle instead of reasoning in terms of a global ordering.

In questions 2, 3 and 4, the mean ranks give more insights since only five claimants are considered[7]. In question 2 we considered the same six versions of the scenario as in question 1 and the results are shown in 2.1, 2.2 and 2.3. The global ranking is the same for all the versions with few exceptions. In particular, need was almost always ranked first while lottery was ranked last[8]. Fitness and external right also obtained fairly low scores, depending on the question or the framing. Effort also obtained a low score in almost all the variants[9]. In question 3 and 4 we focus on distributive decisions to be made within a family and on the context of future research and development. The mean ranks are similar as found for question 2. Need was given the highest rank and lottery the lowest for setting priorities within the family. In the case of future research and

[7] The format of the question allowed respondents to express indifference towards alternatives. For computing the descriptive statistics, we assigned to two or more equally ranked principles the average score.

[8] There are two tentative explanations for the fact that 'lottery' always ranked last. The first is a framing explanation : lottery might be taken as an arbitrary choice as the word 'lottery' in itself has a negative connotation. Another possible explanation is that respondents oppose lottery because they are not indifferent among alternatives and rather think that some principles must ranked before the others.

[9] Note that, unlike in question 1, questions 2 and 3 use a positive description of desert (this principle is associated respectively with individuals who have conducted a healthy life -not smoking, taking exercise and avoiding fatty food- and individuals who best follow the medical instructions against asthma. By contrast, question 4 frames desert negatively -as individuals who have high risk behaviours. Thus, the fact that the desert principle obtains a low score whether framed positively or negatively seems to show that the principle is seen as less important than the other principles in priority setting, irrespective of its positive or negative content.

development lottery is still given the lowest rank, while need, fitness and external rights are given almost the same rank.

Table 2.1 Question 2 : there is a scarcity of donated hearts (...) please rank the following principles for setting priorities for a heart transplant...

Principle	Mean Rank (Heart Transplant, non-normative)	Mean Rank (Allergy prevention, non-normative)	Mean Rank (Access to the Health Care Sector, non-normative)	Mean Rank (Heart Transplant, normative)	Mean Rank (Allergy prevention, Normative)	Mean Rank (Access to the Health Care Sector, normative)
Need	1,9	2,1	2	2,2	1,9	1,9
Fitness	2,2	2,7	2,4	2,3	2,3	2,3
External Right	2,8	3	2,7	2,6	2,9	2,6
Effort	3,2	2,8	3,4	3,2	3,3	3,5
Lottery	4,8	4,3	4,4	4,7	4,6	4,6

Table 2.2 Question 3: your children suffer from a mild form of asthma, we ask you to indicate how you would like to set priorities in their treatment...

Principle	Mean Rank (non-normative)	Mean Rank (normative)
Need	1,7	1,4
External Right	2,6	2,5
Fitness	2,7	2,8
Effort	3,3	3,4
Lottery	4,6	4,7

Table 2.3 Question 4: the development of public/private medical research takes many years before it generates a successful outcome, given this, which priority do you think public medical research should give to different types of disease?

Principle	Mean Rank (private research, non-normative)	Mean Rank (public research, non-normative)	Mean Rank (private research, normative)	Mean Rank (public research, normative)
Need	2,2	2,4	2,2	2,3
Fitness	2,4	2,7	2,4	2,8
External Right	2,3	2	2,4	2,2
Effort	3,4	3,4	3,2	3
Lottery	4,7	4,4	4,7	4,4

Even if the global picture is quite undifferentiated, some remarks can be made with respect to each specific question. Question 2 was asked using six different versions and thus it may provide some insights on the issue of invariance of judgments. While the global ranking is pretty much the same across variants, the average interval of the mean rank of 'need' is around two points, while the mean rank of 'effort' varies much more. It also appears that mean ranks are more different across variants rather than across framings. For instance, mean ranks of the non-normatively framed heart transplant variant are closer to the mean ranks of the heart transplant variant with a normative framing, than they are with respect to the two others variants that are non-normatively framed. The same holds for the allergy prevention, while the access to health sector case is unclear. We observed the same invariance between framings in question 3, where only one variant with two framings had been used, and in question 4 where two variants and two framings had been considered. Again, the differences between mean ranks are more pronounced when shifting from one variant to another than when comparing the normative versus the non-normative framing.

3.2 Principal component analysis

Mean rank statistics provide a very concise description of preferences structure. In order to analyse the information contained in the data set in more detail, we use *Principal Component Analysis* (PCA), which allows for a broader exploratory investigation with no need for making restrictive assumptions on the multivariate distribution that generates the data.

PCA is applied to the standardised scores[10] obtained by each claimant (question 1) or each principle (questions 2,3,4). Consider, for instance, the first question phrased in non-normative terms in the heart transplant variant. This question dealt with a case of priority setting with 19 claimants and was posed to 44 respondents. Information can thus be synthesised in the two following ways: either by representing 44 vectors of standardised scores in a lower dimensional space (a point is here the score given by all 44 respondents to a given claimant, call this a claimant-point), or projecting 19 vectors of standardised scores in a lower dimensional space (a point is here the score given to the claimants by a given respondent, call this a respondent-point). As our main objective is to discuss the empirical relevance of theories of justice and more especially of the taxonomy of the four principles of justice, the first kind of analysis is the most appropriate.

When applying the PCA to the set of claimants, the n-first principal components are the n linear combinations of claimants that give the best representation (i.e. summarises the highest quantity of information, variance, with the lowest number of dimensions, $n< 19$) of observations. Observations have to be considered as 44 independent drawings of 19 random variables, whose multivariate joint distribution is unknown.

By construction, the scatter of claimant-points in the space can be interpreted as follows: the closer two points are, the more these two claimants are considered to be similar by the respondents. 'Similar' is to be understood in statistical terms – i.e. as standing for a correlation of principles in people's view. It might stand for an association of principles which can be assessed more or less explicitly by respondents, and which in the best case verifies properties of logical consistency[11] and in the worst case arises from a cognitive mistake.[12] Indeed, the semantics of

[10] The PCA on standardised scores is indeed a common procedure aimed at washing out the correlation of principles due to the cardinality of ranking (a PCA run on scores would yield the first principal component separating the space into the high-ranked claimants and low-ranked claimants.) As we already have this information, we use PCA to gain additional insights into the structure of the preferences'.

[11] By consistency, we mean coherence. Being consistent would mean, for instance, that assigning the 'same priority' to drug-takers and drinkers and 'higher priority' to non-smokers, would imply that the last ordering between non-

PCA is intrinsically related to its results, this is why we postpone a discussion of it until a later point. At this stage, we only need to bear in mind that two close claimant-points indicate proximity between the two corresponding claims, according to what is stated by respondents. Analogously, two distant points indicate that the claims are considered differently[13].

Before the specific discussion of each question, a few more things need to be pointed out. Since the variables have been standardised, the picture resulting from PCA does not account for high or low scores of principles, i.e. high or low priority given to categories of claimants. Thus, for instance, if two principles are projected closely, this means that they have been equally considered by respondents (either they have been given a similarly high score or a similarly low score). Conversely, two distant points have been assigned different scores by respondents, thus there is no unanimous view. For instance, in the first picture (Fig 1) the disabled and those suffering from genetic diseases are close. These two groups of claimant are also close to drug-takers. A likely explanation is that the first two were given equally high priorities and respondents also agreed in assigning a low priority to drug-takers. By way of contrast, for claimants like children who lie in the opposite part of the space, we might conclude that those who ranked the disabled and those suffering from genetic illnesses in the same way, did not judge children in a similar way. For instance, half of the sample assigned higher priority to the disabled and lower priority to children while the other half expressed the opposite opinion. Whenever the picture allows for a readable interpretation, clusters represent claimants who are to be considered homogenous in terms of some underlining explanatory factors. As we will point out later on, we could identify the relevant explanatory variables for our data with some well-known principles of justice.

In what follows, we report the PCA figures and comment them in details, while we refer the reader to the appendix for the tables with the interpretation of axes[14].

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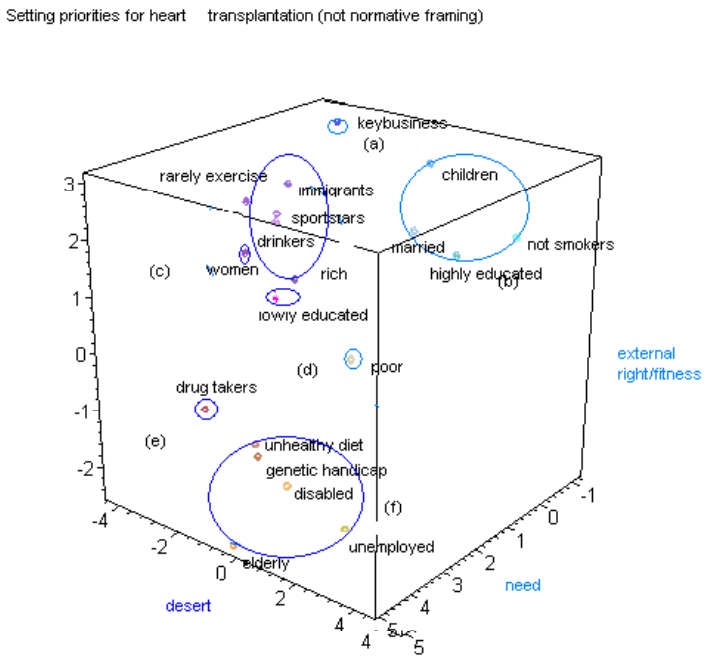
smokers and drug-takers held as well. Indeed, the elicitation format of questions does not allow for a direct test of transitivity. The idea is that respondents should be aware, when assigning a score to a category, that they are implicitly ranking all the other claimants.

[12] Say, for instance, one can confound the poor with poorly-educated people.

[13] See Johnson and Wichern (2002) for a general presentation of the PCA method and for criteria for choosing PCA instead to other multivariate analysis. For an application of the PCA to a multi-profile preferences approach see Laslier (2003).

[14] In the main text we give an example of such table (table I). In the appendix, the PCA figures are reported integrally with their corresponding table.



In the question about heart transplants (non-normatively framed), two main groups of claimant appear, one is situated in the upper region, the other in the lower one while the centre is occupied by "the poor". The upper region includes heterogeneous (from the perspective of principles of justice) categories of claimants; the same is true for the lower region. All things considered, points in the lower region correspond to claimants deserving compensation according to standard of egalitarian theories. This area refers to individuals who are (objectively) worse-off for factors that are on the whole not in their control, when this has somehow been overweighed by each claimant's chances of a successful transplant (fitness principle) and by some 'status considerations' (external right).[15] The separate analysis of the first three axes (explaining respectively 20%, 16% and 10% of the variance) provides more subtle particulars and helps the overall interpretation of the PCA.

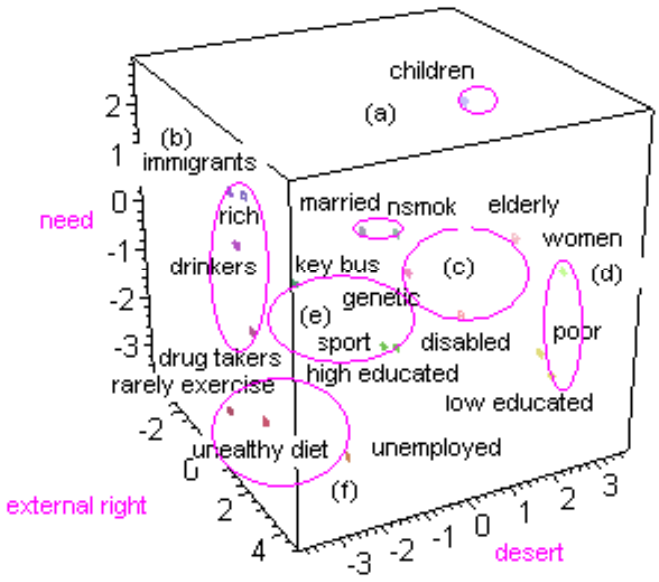
[15] There are two exceptions to this: one is represented by drug-takers while the second is those with an unhealthy diet. The latter is not really problematic with respect to the egalitarian standard discussed above, insofar as in India an unhealthy diet can be unambiguously considered as independent of the voluntary actions of people. In other words, nutrition does not come under free will as it, roughly speaking, turns out to be in Western societies. The other category of claimant close to this group is more knotty as this has clear connotations in terms of responsibility. This is why we have put this claimant-point to one side within the space.

The axes (principal components) can be interpreted along the lines of the taxonomy of the four principles of justice (see table I). Thus, the first axis represents need while the second axis can be read in terms of the responsibility for a better or worse health status (henceforth: desert, even if this has to be intended in its negative definition, i.e. as 'lack of desert'). The third axis represents fitness (among the extreme claimant-points appear children and the elderly, the former being understandably associated with the most successful outcome while the latter with the worst outcome). However, it can also be interpreted in terms of external right: for instance, claimant-points such as key-business people or sports-stars are more difficult to justify in fitness terms only. If one considers that these two categories should be given higher or lower priority than other categories so that the social utility is increased (fitness reason), the social utility is clearly defined according to a social-status scale. Clearly, in some cases the principle of external right is to be intended along the lines of positive discrimination and not related at all to the fitness principle (for instance: women or immigrants).

------- Table I Interpretation of axes: Heart transplantation scenario with a non-normative framing----------

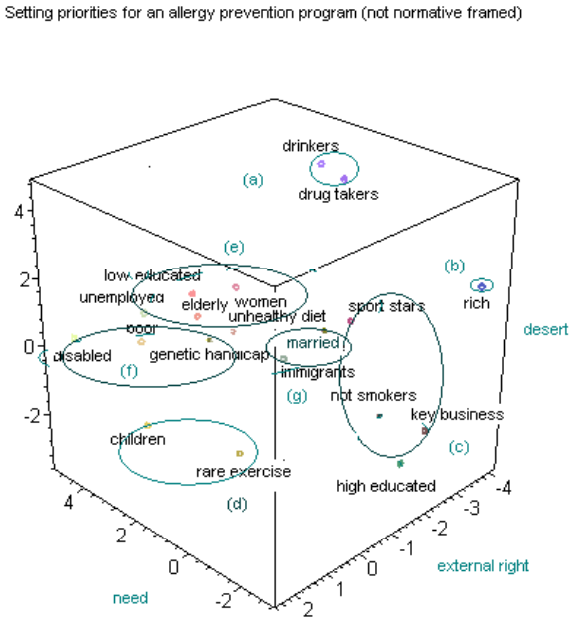
Groups of Claimant-points	External Right& Fitness	Responsibility for being worst-off	Objective Need
(a) Key-business	High	Low	Low
(b)Children, married, non-smokers, high level of educattion	High (children for life expectancy, married: extended utilitarianism)	Variable (i.e. high for non-smokers and nil for high levels of education)	Low
(c) Immigrants, sports stars, drinkers, those who rarely exercise	High	Variable (i.e. nil for poorly educated, high for drinkers or those who rarely exercise)	Variable (i.e. nil for the rich, high for the poorly educated)
(d) Poor, poorly educated	High	Low	High
(e) Drug takers	Low	High	High
(f) Unhealthy diet, genetic handicap, disabled, elderly	Low	Nil (except for unhealthy diet)	High
(g) Women	High	Nil	Pretty high

Setting priorities for heart transplantation (normative framing)



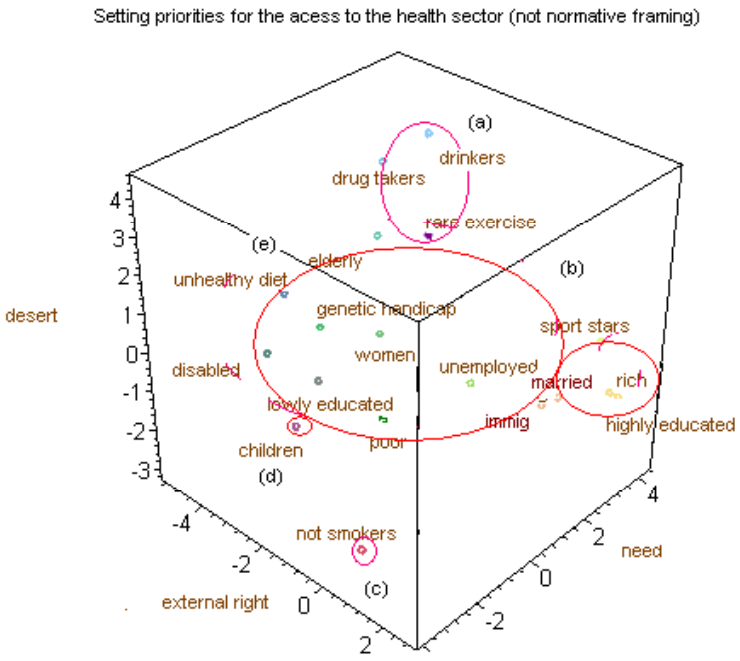
Looking at the PCA on the same question but with a normative framing, some slight diversity emerges, though this doesn't fundamentally change the interpretation of the three axes. The swapping of axes is not problematic in itself, insofar as the way in which claimant-points cluster together is quite similar to how they cluster in the previous scenario. However, this is not always the case (note for instance: sports stars or drug takers). Besides, the swapping of the axes can be interpreted as changing the weightings of the principles of justice throughout the scenario and/or the framing. When asking for simple preferences, for example, the principle explaining most of data inertia was needed, whereas desert becomes the most informative when the normative framing is utilised.

The remaining important differences concern the 'extreme points' in the pictures. Once again, in the normative framing the group of claimant-points for which personal responsibility is the cause of bad health status lies in a very isolated area. The similarity between the two framings emerges on inspection of Tables I and II (Table II is in appendix). Note that most categories of claimant cluster in the same way and, more importantly, can be interpreted in homogenous terms from the perspective of the relevant principles of justice.



The second scenario is about a programme for allergy prevention. The question that arises here is to see whether and how the seriousness of the disease affects respondents' viewpoints.

The first remark is that claimant-points are more spread out than in the previous scenario and that this is probably the main effect of the lower degree of urgency associated with the medical treatment under question in this scenario. As in the first scenario, those categories that are opposing by definition (poor/rich, well-educated /poorly-educated, non-smokers/drug takers) fall far apart in the space, confirming them to be antonymic in nature from a normative perspective as well. Overall, the group of claimant-points that are worst-off for no fault of their own fill the space irregularly, while those who are morally responsible for their poor health status (drinkers and drug users) stand far apart. Again the interpretation of principal components is comparable to those of previous scenarios (see Table III in appendix). When the same question is asked with a normative framing, the picture is clearer (figure 4 is in appendix). Groups are more homogenous and make more sense from the normative standpoint of theories of justice (see Table IV).



In the last question, we asked respondents to establish a priority of treatment in the case of generic access to the health care sector. The most remarkable feature of this PCA is represented by the third axis which opposes those who are the most responsible for their bad health status to all the others. Unlike previous scenarios, the group of low-deserving individuals includes those who "rarely exercise" as well. The second axis distinguishes children and non-smokers from all the others. Finally, note that the normative framing doesn't give significantly different results except for the fact that some axes are inverted (see figure 6 and table VI in appendix).

To sum-up the main results of this part, the specific variant used to frame the question has an influence on how priorities are valued and decided. The same is true for the normative/non-normative specifications; however the influence of the latter is certainly less important than the influence of the former. What this consists of is more difficult to spell out, as the PCA pictures are too complicated to infer a systematic effect given by the variant and/or the phrasing, or even some regularity in the scattering of claimant-points. Nevertheless, the six scenarios present some common features that allow for a fairly homogenous interpretation of the axes allowing us to conclude that distributional judgments are consistent. We repeatedly outlined a correspondence between various clusters of claimant-points and one or other of the four classical principles of justice. Moreover, these correspondences remain quite stable when changing the scenario. In the same way, some claimant-points have a special 'aside' status: this is the case for children, drug-takers and drinkers that are very often situated far away from the other points. The distances between claimant-points do not vary fundamentally with the scenario, and a coherent interpretation of these distances in terms of the underlying principles of justice can be done.

The second part of the analysis is devoted to the running of the PCA on questions 2 to 4 (figures are in Appendix). Again some general things are worthwhile noting before getting into the details of each question. Remember that in this group of questions, a ranking of 5 claimants has to be established. Each claimant represents a principle of justice (except for distributing the medical treatment by lottery, implying an equal chance of getting the treatment for each claimant) and this time the association between a claimant and a principle is done explicitly[16].

Roughly speaking, points are scattered across the space, indicating that each principle is very well distinguished from all the others[17]. Two interpretations of the distance existing between points can be made. First, the wide scattering could mean that, irrespective of which principle is preferred, all of them have a defendable normative autonomous content. Second, consider that no preference structure is detectable –in the worst case that respondents answer randomly. Though not a decisive test, the comparison of PCA pictures across variants and framings can be telling on this point: the more similar the pictures are, the more likely it is that the respondents do not answer arbitrarily but have reasons for their ranking. Indeed this test is positive, as the two-dimensional plotting of points shows (see figures 7 onwards in the Appendix).

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[16] We did not mention the correspondence of alternatives to the principles of justice to the respondents. So, by explicit association we refer to the interpretation that we gave to each alternative, which is more straightforward than in the previous question as each claimant is extensively described. By contrast, in the first question claimants simply coincided with categories of patients. For more details, the reader is referred to the scenarios in the appendix.

[17] This is consistant with the previous PCA results, in which principles are principal components (by construction, principal components are uncorrelated).

The second question deals again with the problem of heart transplants, allergy prevention and access to the health care sector and the scenario reads exactly the same as for question 1. The main two features in PCA for question 2 are the proximity of effort and external right as well as the standing apart of fitness, for almost all the variants and with all the framings. The first correlation can be explained by the similarity of external right and effort claims in this context. External right is associated with the time spent in the waiting list, whilst effort refers to individuals who voluntarily undertook the decision to (and sustained the cost of) living a healthy life. Giving priority to these two categories of claimant comes down to rewarding deserving behaviours – this is clearly the case for those who make an effort, but is equally the case for those who took the decision of registering themselves on a list.

In the third question, the priority-setting problem involved a costly treatment for asthma that has to be delivered to one's own children. Each child is identified with one of the four principles of justice and a lottery is proposed as the fifth possible criterion of distribution. Here the pictures are almost identical when considering the first two components only. Note in particular that the second axis opposes fitness to all the other principles. Lottery and effort are close (along both the first and second axis) while need and external right are superimposed on the first axis. The third component alters the picture somewhat (see appendix)[18].

Fitness once more has a special value: this is the principle whose (sum of) covariance (with respect to the remaining principles) is the highest. Thus, fitness is associated with heterogeneous opinions everywhere else; meaning, for instance, that those who agree on assigning a high score to fitness disagree on the remaining principles as they rank them quite differently. By contrast, there is more homogeneity among people's attitudes about what concerns lottery allocation and effort on the one hand, and external right and need on the other. The association between external right and need might be explained by the fact that the external right claim is very close to the need –claim. External right is in fact formulated as "the discomfort caused by asthma for the longest period of time" while need is expressed by "the most serious discomfort in everyday life". Both claims can be read along a 'need-meter', which accounts for time as a factor of degree of discomfort for the former and the seriousness of the discomfort for the latter.

Finally the fourth question is about the priority of long-term investments of medical research (private or public). Here there are some similarities between the normative framing and the non-

[18] In the non-normative framing, the third axis marks a clear opposition of external right to all the other principles and more especially to need while in the normative framing this opposition, though present, is less evident. The mean ranks inspection doesn't help in understanding the difference. Nor this inspection clearly sheds a light on the meaning of fitness.

normative framing, while the two versions (privately versus publicly funded medical research) do not yield the same PCA representation. A common feature among the four specifications is that need plays the same role here that fitness played in previous questions, namely it comes out as an outsider principle.

It is worth commenting on one other feature, which at a first sight might seem contradictory to what was found in the previous question, namely the distance between need and external right. In question 4, need is represented by those who suffer from (have diseases derived from) unhealthy working conditions, while external right is represented by those who suffer from hereditary diseases. Now, from the egalitarian point of view, these categories are fairly homogeneous since they relate to individuals who are worse-off for no fault of their own. It might thus seem puzzling that individuals judge these two principles, which are defined along so similar normative premises, so differently. We offer a tentative explanation relying on the idea of moral responsibility. One possible effect at work might arise from the fact that the responsibility of those working in hard and unhealthy conditions is considered slightly higher than the responsibility of those suffering from hereditary diseases. This holds true to the extent that the former had the choice of working in an unhealthy or healthy environment. In accordance with this view, the distance between unhealthy work conditions and hereditary diseases could be interpreted as the fact that respondents categorise the former group of individuals as responsible and the latter as not responsible. This interpretation fits the ressourcist view, which would assimilate hereditary diseases with the category of *internal resources* that this egalitarian approach refers to in order to indicate those (dis)advantages –inborn or accidentally incurred - that deserve compensation. By contrast, claimants who suffer from unhealthy work conditions do not belong to this category.

However, there is another explanation for the lack of correlation between need and external right which, although insisting on responsibility as well, is different from the egalitarian one.

From this standpoint, those working in unhealthy conditions are not judged as responsible of their poor health status, they are judged as being simply 'neutral' – in the sense of responsibility not being relevant. This interpretation fits with the Indian context, where a large number of people work in unhealthy conditions. The commonness of this situation as well as the awareness that this is not a result of free choice, may explain this so-called neutrality. Furthermore, this is consistent with what is observed in other scenarios where some claimants – potentially falling into the category of those who behave irresponsibly- were judged to be not faulty (e.g. individuals who have an unhealthy diet) and the reason is again that they are not able to choose freely.

In line with this interpretation, respondents made a clear-cut separation between what the individual is responsible for, what the society is responsible for and what neither the individual nor

the society are responsible for. In the scenario in question 4, claimants who adopted high-risk behaviours, those who suffered from bad working conditions and those who suffered from a hereditary disease correspond respectively to the three categories of responsibility mentioned above (individual responsibility, responsibility of society as a whole and "external" responsibility, which means circumstances arising by pure chance).

Note that the egalitarian theories focus exclusively on what has to be ascribed to the individual (this is the common definition of moral responsibility occurring under the condition of free will), and posit that all responsibility that is not imputable to him/her has to be taken by society as a whole – that is society must compensate for unequal distributions of morally arbitrary resources.

In the interpretation that we propose here, by contrast, a compensation case is found in all the circumstances where both individual responsibility is not objectionable and society is held accountable for the poor welfare of certain groups of individual.

3.3 Looking for global consistency

One last way of discussing individual rankings is to apply a social preference function to them to see what the outcome in terms of the global queue of claimants is. Several aggregation rules are available, but since we only want to perform a consistency exercise we can use the most common ones without any loss of generality. The main objective here is to assess the strength of priority preferences structure by analysing how the individual ranking translates into a social one: the less variable the social choice outcome the more reliable the information contained in individual preferences.[19] Table 3 reports the Condorcet rule and the plurality of the five claimants for the second question for each treatment. Generally speaking, the global ranking is the same irrespective of how individual preferences are aggregated. There are a few exceptions in some sub-samples for intermediately ranked claimants, while the most approved and the least approved claims are unambiguously the need and the lottery no matter which social preferences function is used. In

[19] Of course, one could question the way in which we discuss individual ranking reliability. Typically, it could be the case that consistency between individual and social outcomes is the result of the homogeneity of the respondents' sample, and that this could be either be caused by a true agreement on priority rationales or by a framing bias due to a poor specification of the survey. Only the former of course would indicate that judgements are substantive. However, the rest of the analysis (the analysis of the principal components and the several context-dependency tests performed) tended to show that preferences are not expressed tricially and several dimensions are needed to provide a proper description of their structure. Moreover, we found that judgements were trustworthy and not randomly determined. We are thus fairly confident that a framing effect is not at work here.

On the other hand, the uniqueness of global ranking may not depend on the consensus of respondents, and could be due, for instance, to some other factors (such as the fact that some principles are "driving" more than the others, typically that is very clear what people like most and what they dislike most, so in some senses the highest- and lowest- ranked principles provide significant information, while the intermediately ranked ones are less informative).

particular, need always turned out to be the Condorcet winner, when the strict majority is computed on pair-wise comparisons of claims. We run an analogous consistency test for the other questions and the results are roughly the same.

Table 3 : Aggregation of individual preferences.

Claim	Condorcet (1^{st}sample;2^{nd}sample;3^{rd}sample…)	Mean Rank (Borda) (1^{st}sample;2^{nd}sample;3^{rd}sample…)	Majority (number of 1^{st} choices) (1^{st}sample;2^{nd}sample;3^{rd} sample…)
Need	(Winner in all the samples)	(1,9; 2,1; 2; 2,2; 1,9; 1,9)	(26; 19; 19; 16; 37; 22)
Fitness	-	(2,2; 2,7;2,4; 2,3; 2,3; 2,3)	(11; 10; 11; 14; 14; 11)
External Right	-	(2,9; 2,8; 2,7; 2,6; 2,6; 2,9)	(4; 3; 2; 5; 7; 5)
Effort	-	(3,2; 3; 3,4; 3; 3,5; 3,3)	(2; 7; 5; 2; 9; 5)
Lottery	-	(4,7; 4,3; 4,4; 4,7; 4,6; 4,6)	(2; 3; 1; 0; 1; 1)

In the first question (claimants as categories of patients), 'children' is almost always the Condorcet winner, while mean ranks and Borda scores give the same ranking of treatment priorities. However, the test of consistency is weaker for this question since the number of alternatives was higher (so the cognitive burden was potentially higher). Moreover, the question was not directly phrased in terms of ranking. It is thus more likely that the priority is assigned in “absolute” terms to each claimant, without considering the whole list of alternatives.

The main interest in aggregating individual judgments is to see whether there is social consensus with respect to the final ranking of claimants. The test was successful in proving that there is a common perception of the just priority-setting.

To conclude, eliciting ethical judgements at the individual level can be a fruitful exercise when trying to ascertain what society agrees upon for the distribution of scarce resources and the entitlement of priority rights.

4. Conclusions.

In this paper we addressed the question of what people think is a just priority of treatment in the distribution of health care resources. To this end, we conducted a stated preferences survey in India. The empirical evidence was mainly discussed with respect to three aspects: first, what the principles of justice most commonly supported by individuals are, second, whether the distributional tastes are context-dependent (where context-dependency was especially explored by varying the scenarios, the framing and the countries of respondents) and third, we were interested in discussing the normative soundness of distributional judgments, and in particular to see to what extent they are consistent with various received theories of justice.

With respect to the first point, we found that some principles of justice were frequently assigned a high rank, irrespective of the variant used. This is the case for need, which is ranked first by a near majority of respondents in all the questions. Fitness and external right found ambiguous support, and effort was repeatedly given a low score. It was also clearly apparent that lottery is the least supported principle since there was nearly general consensus for ranking it last. As far as concerns the study of claimants' personal attributes, we found that some categories have been systematically assigned a higher priority of treatment such as children, the disabled and the poor. On the other hand, no category has been given (on average) a lower priority. This is the case for claimants who a fortiori can be thought of as deserving a lower priority due to their irresponsible health practices (drug takers, drinkers and those who rarely exercise) but also for some categories like the rich and highly-educated people. In both cases, claims do not legitimate a departure from equal treatment. However, this does not mean that they are judged as not being relevant from a normative point of view and by contrast elements like effort with respect to an individual's own health status are critical factors that can divide people's opinions.

We then analysed how the framing of the scenarios affects the respondents' attitudes with respect to severity of illness and normative framing. Interestingly, unlike general access to health care, the two degrees of seriousness do not affect the priority setting.

The influence of the distributional context was stronger in the scenario where claimants were designed as belonging to the same family, in particular when they were siblings. Here the need criterion obtained the highest score and was also very much contrasted to other principles. This is in line with what Miller (1999) insisted about the relationships between claimants and the way in which this affects the choice of the relevant principles (and in particular about the fact that family relationship is mostly associated to need).

In contrast, as far as the normative *versus* non-normative framing is concerned, we observe no significant impact on individuals' preferences. This is evidence of the fact that the stated preferences method can successfully elicit individuals' judgements, and that no partiality bias plays a significant role when establishing rules of priority.

Finally, we addressed the question of whether distributional judgements can be considered as relevant and trustworthy. We tackled this question by performing a principal components analysis. The aim was to see whether the information contained in people's judgements is consistent with the classical principles of distributive justice. We found that indeed this is the case, and that respondents judged some claimants belonging to homogenous categories of claimant as being 'equally deserving' or 'equally undeserving' within the framework of various theories of justice. In particular, we found a correspondence between clusters of claimants and egalitarian theories of justice in those scenarios where the groups of claimant who were worse-off for no fault of their own are considered differently from individuals who are at least partially responsible for being worse-off. This finding is in line with previous empirical research.

One other interesting feature was that a higher priority was assigned to individuals in extreme need, although the need is not necessarily correlated with their current health status. This was the case, for instance, with children and women. This can be explained by the very precarious situation in which these two categories of individual find themselves in India, who, *ceteris paribus*, are seriously discriminated against in terms of access to the health care system.

In theory, we could have provided an additional test to see how priorities vary with the socio-economic characteristics of respondents in order to investigate whether judgements are self-serving or disinterested. However, since the Indian sample of respondents is quite homogenous with respect to age, level of education and social background, we decided not to conduct such a test. Previous studies (for a review see Konow 2003) have found little evidence on the bias that can derive from using convenience sample, as students' one. Indeed, these researches indicate that results obtained from students sample can be generalised to more representative groups of population.

In this paper we have shown that a common principle for priority setting can be used in the health care sector. We arrived at this conclusion through two different lines of reasoning. On the one hand, this has been pointed out by showing that priority setting is very robust to the distributional context specified in the scenario. On the other hand, a common agreement is found when ranking principles of justice since the invariance of the social decision to the voting rule used has proved. Consistently, we have shown that both analyses reveal need as the leading principle for

setting priority. We also discussed aspects such as the responsibility of society as a whole with respect to individual well-being and the discrimination against some categories of people in India in terms of gaining access the health care sector, justify and sustain the view that especially badly-off individuals need to be treated with priority.

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Appendix.

QUESTION 1 with a non-normative framing, (in parenthesis, the normative framing)

1st variant – heart transplantation

A problem of today is that there is a scarcity of donated hearts suitable for heart transplantation. This means that there are more individuals in need of a heart transplant than there are hearts to use. Thus rule for selection is needed.

2nd variant – allergy prevention program

A considerable amount of money is invested in the research of new treatments for allergies. The result of this research is that a more efficient combination of medicines could be prescribed which would improve the quality of life amongst the recipients of the treatment. But because these treatments are very expensive, not everyone in need of such treatment can be given it. This means that there are more individuals who need such an allergy prevention treatment than what can actually be provided. Thus rule for selection rule is needed.

3rd variant- access to the health care sector

A considerable amount of money is spent on the health care system, both on in-patient and outpatient treatment as well as on prevention. However, it is not enough to cover the cost of everything that is currently needed. This means that there are more individuals who need treatment than there are resources to provide such treatments. Thus rule for selection rule is needed.

(common part to the three variants – non-normatively framed)

Below we present some personal characteristics that might, in principle, be used when setting priorities. We ask you to indicate how you would like these characteristics affect (**you think about how these characteristics ought to affect just)** priority settings. The individuals to whom you assign a higher or lower priority will consequently be treated before or after others. For instance: if you were asked whether being «a Construction worker » is a relevant characteristic for setting priorities, you would express whether you think **(it is just)** that construction workers ought to be given a higher, lower or no priority in relation to others, where others are *all* non-construction workers. Only the mentioned feature differs between the individuals in the two groups—in this example it is whether an individual is or is not a construction worker. Please note that all individuals have waited the same length of time, are in equal need of medical treatment and have the same probability of a successful outcome. For each characteristic, select the priority setting you prefer (**think is just**) -tick one box only on each row-.

	Much Higher priority than others	Higher priority than others	No Priority	Lower priority than others
CHARACTERISTICS				
Married				
Immigrants				
Unemployed				
Sport stars				
Disabled				
Children				
Non-smokers				
Individuals with unhealthy diets				
Key business people				
Rich people				
Individuals suffering from genetic illnesses				
Drug users				
Elderly people				
Heavy drinkers				
Women				
Poorly educated people				
Poor people				
People who rarely exercise				
Highly educated people				

QUESTION 2 with a non-normative framing, (in parenthesis, the normative framing)

1st variant – heart transplantation

As in the previous situation, there is a scarcity on donated hearts in relation to the number of individuals waiting for a new heart. Below we present five principles that can be used when setting priorities for receiving a heart transplant.

2nd variant – allergy prevention programma

As in the previous situation, there are limited resources for offering individuals allergy prevention programmas. Below we present five principles that can be used when setting priorities for receiving an allergy prevention programma.

3rd variant- access to the health care sector

As in the previous situation, the money spent on the health care system is insufficient for satisfying all the existing needs. Below we present five principles that can be used when setting priorities in the health care sector.

(common part to the three variants – non-normatively framed)

Please rank them from 1 (= the one you most prefer/ **the one you think is the most just**) to 5 (= the one you least prefer/**the one you think is the least just**). If you wish you can give the same rank to several criteria.

Criteria	**Rank**
Priority given to those who have conducted a healthy life such as being a non smoker, taking exercise and avoiding fatty foods	
Priority given to those who have the highest probability of having a positive outcome from the heart transplant	
Priority to those who have waited longest for a heart transplant	
Priority based on a lottery	
Priority given to those who, without a heart transplant, will suffer the greatest discomfort in everyday life because of their heart problems	

QUESTION 3 with a non-normative framing , (in parenthesis, the normative framing)

Let us assume that all your children suffer from a mild form of asthma. Your family's doctor provides you with only one unit of treatment, since the cost of treatment is high. We ask you to indicate want to set priority in their treatment, provided that their life is not in danger and that the effects of the treatment will improve their every-day quality of life. Below we present five principles that can be ɔn setting (a just) priority in their treatment. Can you rank them from 1= the one you most prefer **(the most just)** to 5 = the one you least prefer **(the least just)**. You can eventually give the same rank of ce (in terms of justice) to alternative criteria.

	Rank
Priority to the child who will have the most serious discomfort in his/her every day life from asthma	
Priority to the child who best follows the medical instructions against asthma	
A lottery	
Priority to the child who has suffered from asthma during the longest period of time	
Priority to the child who have highest probability of having a positive outcome from the treatment	

QUESTION 4 - with a non-normative framing, (in parenthesis, the normative framing)

1st variant – private medical research

Pharmaceutical firms invest lots of funds into research and development of pharmaceuticals. Generally, the development takes many years, often 10-15 years from an idea to a pharmaceutical ready for the market, and thus there is a long time span before the research generates any income for the firms. Given the long time perspective, firms have to decide today on which kind of diseases they want to be able to treat over the next decades. Given that your grandchildren will be able to benefit from results of such research, which priority do you think (is the just priority) that firms should give to different type of diseases? Can you rank them from 1= the one you most prefer **(the most just)** to 5 = the one you least prefer **(the least just)**. You can eventually give the same rank of importance to alternative criteria.

2nd variant – public medical research

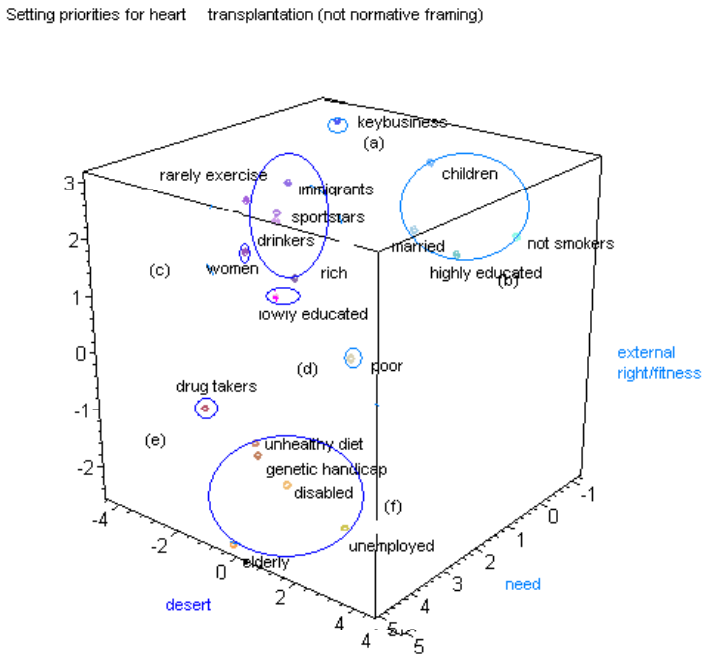
Public medical research invests lots of funds into research and development of pharmaceuticals. Generally, the development takes many years, often 10-15 years from an idea to a pharmaceutical ready for the market, and thus there is a long time span before the research generates any successful outcome. Given the long time perspective, one has to decide today on which kind of diseases one wants to be able to treat over the next decades. Given that your grandchildren will be able to benefit from results of such research, which priority do you think (is the just priority) that public medical research should give to different type of diseases? Can you rank them from 1= the one you most prefer **(the most just)** to 5 = the one you least prefer **(the least just)**. You can eventually give the same rank of importance to alternative criteria.

(common part to the two variants)

	Rank
A lottery	
Priority for diseases contracted by individuals who behaved riskily	
Priority for hereditary diseases	
Priority for diseases caused by unhealthy working conditions	
Priority for diseases where research is more likely to be successful	

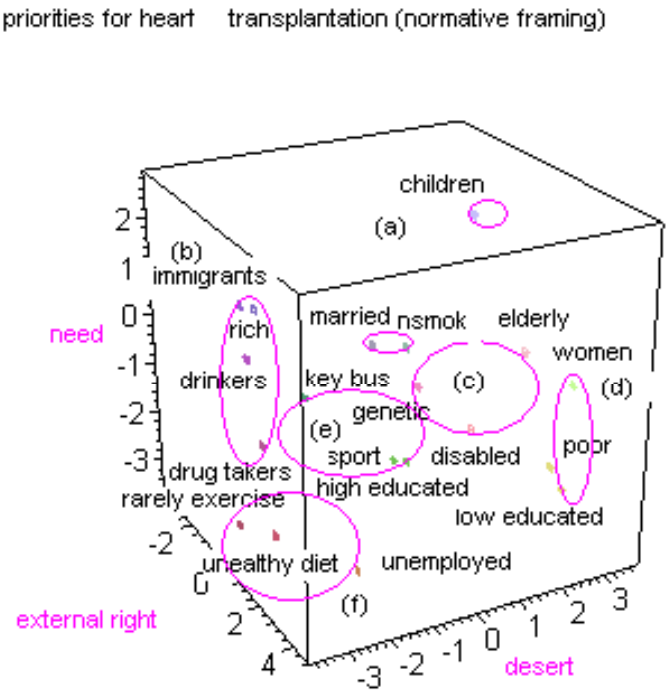
Sample Composition.		
Gender composition	Males	63%
	Females	37%
Age	Average Male	24
	Average Females	21
Education	Undergraduates	40%
	Graduates	48%
	PhD or more	12%
Region of birth	North India	42%
	Central India	35%
	South of India	8%
	Others	15%
Parents' profession	Civil Servants	30%
	Education- Academic	8%
	Farmers	10%
	Engineers	11%
	Employees	9%
	Others	32%
Declared Health Status	Rather Good	45%
	Rather Bad	30%
Subjective Well-being	Happy	72%
	Unhappy	5%
Religiosity	Actively participating	16%
	Not actively participating	54%
	Not religious	23%

PCA Analysis (Question 1, scenario : heart transplantation ; framing : not normative)



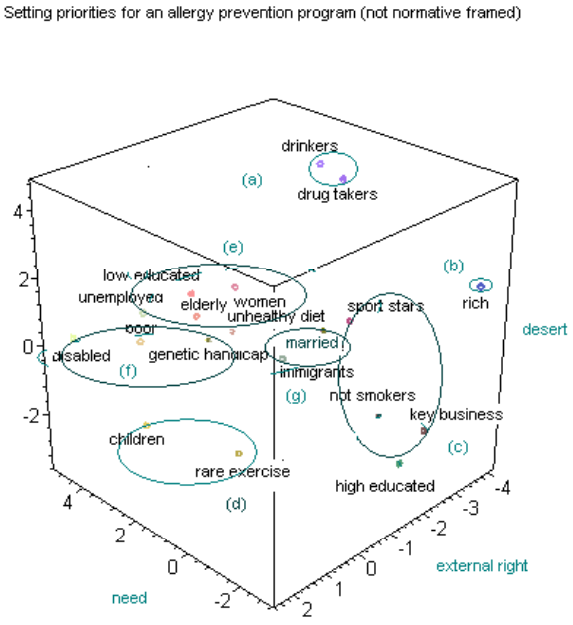
------- Table I Interpretation of axes: Heart transplantation scenario with a non-normative framing----------			
Groups of Claimant-points	External Right& Fitness	Responsibility for being worst-off	Objective Need
(a) Key-business	High	Low	Low
(b)Children, married, non-smokers, high level of educattion	High (children for life expectancy, married: extended utilitarianism)	Variable (i.e. high for non-smokers and nil for high levels of education)	Low
(c) Immigrants, sports stars, drinkers, those who rarely exercise	High	Variable (i.e. nil for poorly educated, high for drinkers or those who rarely exercise)	Variable (i.e. nil for the rich, high for the poorly educated)
(d) Poor, poorly educated	High	Low	High
(e) Drug takers	Low	High	High
(f) Unhealthy diet, genetic handicap, disabled, elderly	Low	Nil (except for unhealthy diet)	High
(g) Women	High	Nil	Pretty high

PCA Analysis (Question 1, scenario : heart transplantation ; framing : normative)



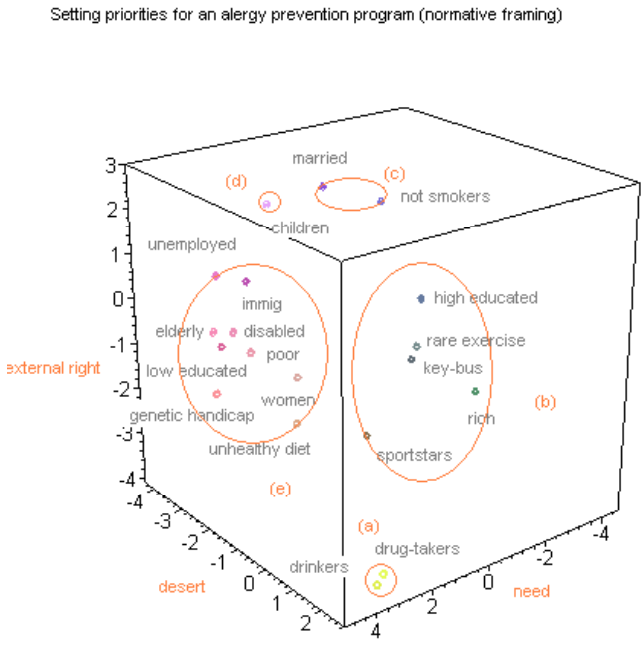
-------Table II Interpretation of axes: Heart transplant scenario with a normative framing----------			
Groups of Claimant-points	External right	Responsibility for being worse-off	Need
(a) Children	Very high	Low	High
(b) Immigrants, rich, drinkers, drug-takers	Nil (low for drug-takers)	High	Nil for immigrants & rich High for drinkers, drug-takers
(c) Genetic, disabled, elderly	Pretty High	Nil	Very high
(d) Women, poorly-educated, poor	Pretty low	Low (very low for women)	High (very high for poor and poorly educated)
(e) Sports stars, well-educated, key-business	Very low	Nil	Very low
(f)Unemployed, rarely exercise, unhealthy diet	Very low	High	Pretty high

PCA Analysis (Question 1, scenario : allergy prevention ; framing : not normative)



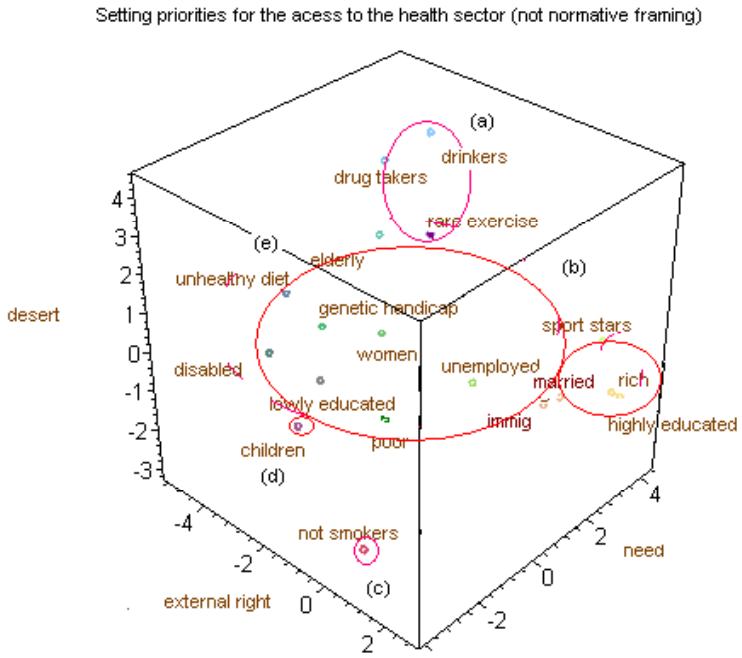
-------Table III : Interpretation of axes : Allergy prevention scenario with a non-normative framing----------			
Groups of Claimant-points	External right	Desert	Need
(a) drinkers, drug-takers	Nil	low	high
(b) rich	Low	High (*)	Very low
(c) key-business, sports stars, non-smokers, well-educated	Nil for key-business & non-smokers, medium for sports stars	High for non-smokers and key-business (*), nil for sports stars	Very low
(d) Children, rarely exercise	Very high for children, medium for rarely exercise	Very low	High for children, nil for rarely exercise
(e) Women, poorly-educated, elderly, unhealthy diet, poor	Very high	Nil	High for poor, nil for the others
(f)Unemployed, genetic disease, disabled	Fairly high	Nil	Very high
(g) Immigrants, married	High	Nil	Nil

PCA Analysis (Question 1, scenario : allergy prevention ; framing : normative)



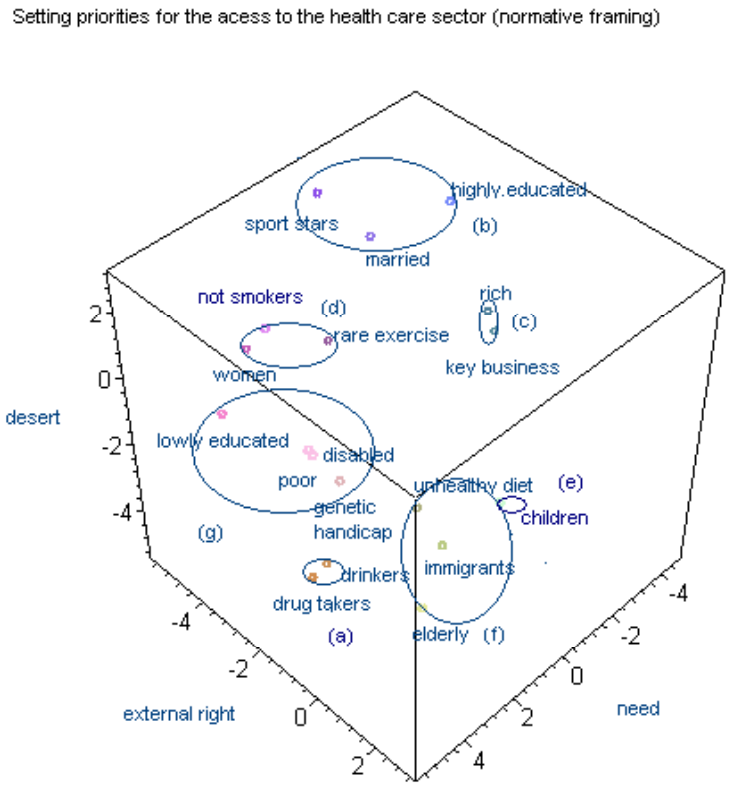
------Table IV : Interpretation of axes : Allergy prevention scenario with a normative framing----------			
Groups of Claimant-points	External right	Responsibility for being worse-off	Need
(a) drinkers, drug-takers	Very low	Very high	high
(b) well educated, rarely exercise, key-business, rich, sports stars	Varying from very low for sports stars to nil for well educated	Very low	low
(c) Married, non--smokers	High	Nil for married, low for non-smokers	nil
(d) Children	High	Nil	high
(e) Women, poorly educated, elderly, unhealthy diet, poor, unemployed, genetic disease, disabled, immigrants	Nil	Nil or low for genetic diseases, immigrants and disabled	high

PCA Analysis (Question 1, scenario : health sector ; framing : not normative)



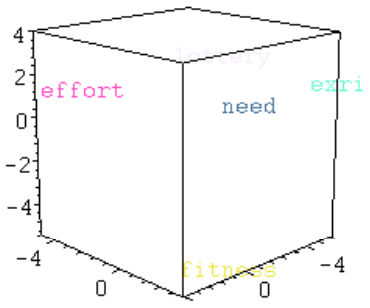
-------Table V : Interpretation of axes : Access to the Health Care Sector with a non-normative framing----------			
Groups of Claimant-points	External right	Responsibility for being worse-off	Need
(a) drinkers, drug-takers, rarely exercise	Nil	Very high	Fairly high
(b) well educated, married, key-business, rich, sports stars	Nil	Nil	Very low
(c) Non-smokers	High	Very low	Low
(d) Children	High	Nil	Medium
(e) Women, poorly educated, elderly, unhealthy diet, poor, unemployed, genetic disease, disabled, immigrants,	Nil	Very low	Very high

PCA Analysis (Question 1, scenario : health sector ; framing : normative)

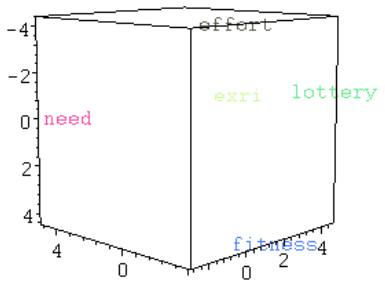


------Table VI Interpretation of axes : Access to the Health Care Sector with a normative framing----------			
Groups of Claimant-points	External right	Responsibility for being worse-off	Need
(a) drinkers, d rug-takers	Nil	Very high	High
(b) well educated, married, sport stars	Low	Low	Nil
(c) key-business, rich	Nil	Nil	Very low
(d) Non-smokers, women	Nil	Nil	Fairly high
(e) Children	Very high	Nil	Fairly high
(f) elderly, immigrants, unhealthy diet	Pretty high	Nil for elderly and immigrants, fairly high for unhealthy diet	Fairly High
(g) poorly educated, unhealthy diet, poor, unemployed, genetic disease, disabled	Nil	Low	Very high

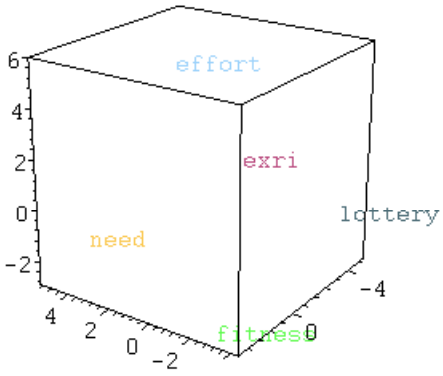
Ranking principles of justice for hearths transplantation (not normative framing)



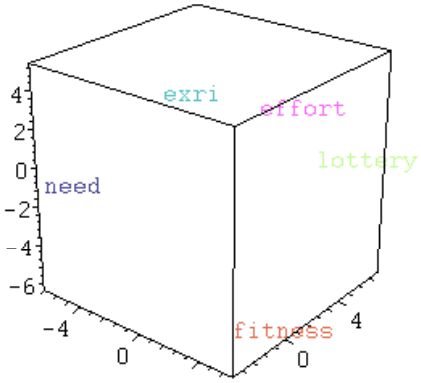
Ranking principles of justice for hearths transplantation (normative framing)



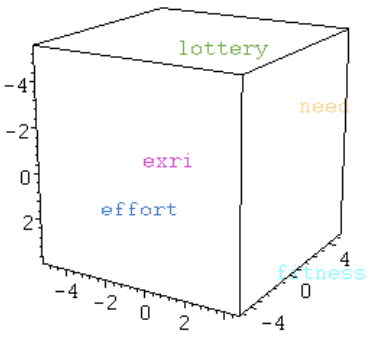
Ranking principles of justice for an alergy prevention program (not normative framing)



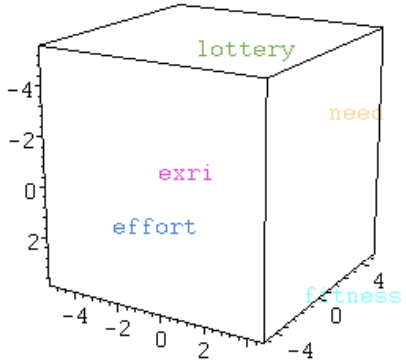
Ranking principles of justice for the access to the health sector (normative framing)



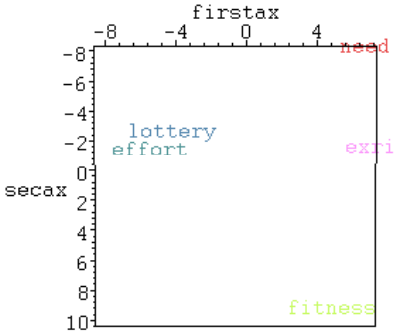
Ranking principles of justice for the access to the health sector (not normative framing)



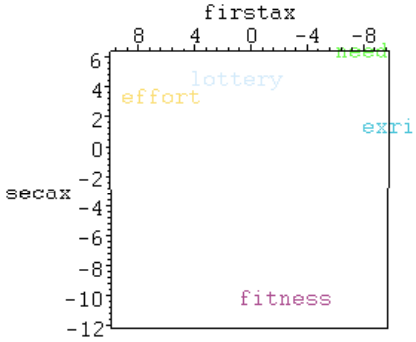
Ranking principles of justice for an alergy prevention program (normative framing)



Ranking principles of justice for healing one's own asthmatic children (not normative)



Ranking principles of justice for healing one's own asthmatic children (normative)



Should age matter in life saving programs?

Empirical results from India and Sweden.

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Abstract

In this paper, we investigate people's preferences for using relative values of statistical life in public policy making. In particular, we study whether the age, gender and household composition of potential recipients of life-saving programme affect people's preferences about whom to save. Using the same design of choice experiment in both India and Sweden, we find similar patterns of preferences in both countries. The elicited age-profiles give an inverted U-shape between relative value of life and age, where highest value is given to individuals in the 10-40 year old group. This finding is in line with the view that the possible number of years left to live is maximised. Furthermore, the social productivity effect was not found to be a relevant explanation of people's preferences.

Keywords: choice experiment, relative value of statistical life, social preferences

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Introduction.

Public policies encompass both life-saving programmes that do not target specific groups of individuals in the population and other programmes that do target specific groups. Consider as an example of the latter, a public investment which may consist of building a tunnel under a busy road either connecting a kindergarten to a football field, or a home for the elderly to a shopping centre. Similarly, environmental policies could be implemented to affect the well-being of each group of individuals to a different extent. For instance, studies have shown that reducing air pollution will mainly benefit the elderly, while reducing water contamination will be more likely to benefit younger people. In the context of health care, decisions are even more radical, since there are cases where a direct choice has to be made on whom to treat.

Current praxis of cost-benefit analysis uses the value of statistical life in absolute terms, thus it is used, irrespective of the characteristics of the potential recipients. On one hand, there are problems in deciding the size of the absolute value of a statistical life, and research has produced figures that are up to 100 times bigger or smaller than each other (e.g. Beattie et al. 1999). Even if one could obtain a reliable measure of the absolute value of a statistical life, public decision-makers may not only base their decision on cost-benefit analysis alone. For example, due to considerations of budget constraints and because of pressures from interest groups, policy-makers may choose programmes that would not be chosen from a cost-benefit point of view. In cases when it is possible to target recipients on the basis of their socio-economic characteristics, there are many potential characteristics that could be considered. The age dimension has been of particular interest, being extensively discussed in the light of previous research that indicates that people do have preferences about whom to save with regard to the age of the recipients. In these

studies, respondents state that younger people should be given higher priority (Cookson and Dolan, 2000, Cropper et al., 1994, and Johannesson and Johansson, 1997).

In this paper, we focus on the relative value of statistical lives in the age dimension, that is we address the question of whether people's preferences are related to the age of the individuals saved. The stated preferences for age profiles may relate to several different considerations. The main explanations were provided in terms of variously defined efficiency arguments and an equity argument, called a fair innings view. The fair innings approach insists that each individual should have a certain number of years of good health (Williams, 1997). The most important efficiency argument corresponds to the idea of maximising the number of expected years left to live. A more broadly defined efficiency argument relates to the social consequences of saving an individual. Previous research on this topic shows that people may not only have preferences for age profiles per se. Indeed, when people are asked if they think that it is more worthwhile to save a young life rather than an adult's life, they might be expressing complex opinions. For instance, they could think about the externalities associated with saving the life of a 40 year-old with a spouse and a child (e.g. Tsuchiya et al. 2003). To avoid editing out effects like this and to assess whether people's preferences are relevant in the age dimension meaningfully, we provide a control for potentially correlated factors (like household composition). In addition, we also control for the gender of saved individuals. This allows us to discriminate between possible explanations about why people should have preferences in age.

By using the same stated preference experiment in India and in Sweden, we estimate the relative values of statistical lives between different groups of recipients defined by the dimensions of age, household composition and gender. The reason for collecting evidence from India and Sweden is that preferences in age-dimension could be extremely different in these two countries,

both for cultural and socio-economic reasons. Cultural and social contingencies might be such that, for instance, the relative value of life for younger people is not equal in these two countries, and the same could be true for the motivation of productivity. We conduct our study by the means of a choice experiment. A choice experiment is a stated preference method where individuals are asked to make repeated choices from different choice sets that are presented to them. For each pair-wise alternative, they have to choose their preferred option. Our results support previous findings of a significant relative value of statistical life in the age dimension. The relative values obtained seem to follow the relative values of life expectancy. This result is consistent with the maximisation of the number of expected years left to live approach, and with the fair innings approach (which is an equity argument) to the extent that differences in weighting between the young and the elderly are low. We also found that the relative value of a statistical life is irrelevant with respect to household composition and gender. The paper starts with a general discussion on absolute and relative values of a statistical life. Section 2 outlines empirical models, and presents our choice experiment. In Section 3 we present the econometric results and finally in Section 4 we conclude.

1. The Value of a statistical life

1.1 The absolute value of a statistical life

A substantial amount of research has been devoted to estimating the value of a statistical life in monetary terms, i.e. an absolute value of a statistical life, using both a revealed preference as well as a stated preference approach (e.g. Viscusi, 1998). Economic models, which allow for the calculation of an absolute value of a statistical life, are based on the willingness to pay for a small risk reduction (see e.g. Dreze, 1962, Jones-Lee, 1974, and Weinstein et al. 1980). The implication of using an absolute value of a statistical life in public decision-making on life-

saving programs is that all individuals are assigned the same value, and this value is independent of any socio-economic characteristics of the recipients.

However, in reality, public projects are rarely conducted to the point where costs equal the benefits, rather the number of public projects is normally also constrained by factors such as the budget allocated and the choice of projects by factors such as pressure from interest groups. Moreover, public decisions on projects may not be consistently guided by the absolute values of statistical life, as found by e.g. Tengs and Graham (1996) and Viscusi (1996) when reviewing previous public policy decisions. In addition, there is growing evidence that it is problematic to measure absolute values of statistical lives using stated-preference methods and this has resulted in estimated absolute values of statistical life being up to 100 times bigger or smaller than each other (Beattie et al. 1999). The large cognitive burden placed on respondents when evaluating their willingness to pay for a small change in risk is argued to be one reason for this high degree of variability (e.g. Beattie et al., 1999; Corso et al., 2001; Hammitt and Graham, 1999; Kahneman Slovic and Tversky, 1982; Kahneman and Tversky, 2000). Revealed preference methods, mainly based on a wage compensation approach, find much less variation in the absolute value of statistical life (e.g. Viscusi and Aldy, 2003). However, using labour market studies limits the valuation to employed people only. Moreover, problems also arise in this context since valuation is related to individual-specific unobservable effects such as preferences towards risk. In theoretical analyses, Cropper and Freeman (1991) and Shepard and Zeckhauser (1982) show, using a life-cycle model approach, that the willingness to pay for a risk reduction varies over an individual's life time, with a peak around the age of 40-45 years. Empirical studies on the willingness to pay for a risk reduction find that willingness to pay varies with the age of the respondent, but to a lesser degree than the theoretical works predict. Krupnik et al. (2002) find that the absolute value of a statistical life is constant among individuals in the age group of

40-70, and then decreases by approximately 30% for those aged above 70. Similarly, Jones-Lee et al. (1985) find that the absolute value of a statistical life at the age of 65 is approximately 90% of the value at the age of 40, which was the highest value of statistical life in their study. In a revealed preference study on the choice of wearing cycle helmets, Jenkins et al. (2001) find that the absolute values for people in the age range of 20-59 years are 33% to 82% higher than for children, where the interval depends on the proportion of time the helmet is worn.

1.2 The relative value of statistical life

From the revealed preference studies by Jenkins et al. (2001), relative values of statistical life can be calculated on the basis of the estimated absolute values for the different age groups. However, these relative values are based on intra-household decision-making, which may differ from people's beliefs about the relative value of statistical life to be applied by policy-makers. Cropper at al. (1994) and Johannesson and Johansson (1997) quantify attitudes towards saving lives at different ages. The respondents were asked to choose between different projects, which would definitely save the lives of individuals from unspecified accidents and diseases. Moreover, the projects were specified as targeting different age groups based on the age of the individuals saved and the number of saved people. They were asked in a single question which of the two programmes presented they would prefer. Both of these studies find that the value of life decreases sharply with increasing age. Similarly, survey results on health care priorities suggest that children should be given higher priority, while people responsible for their own bad health, such as smokers and users of illicit drugs, should be given lower priority (e.g. Anand and Wailoo, 2000, Cookson and Dolan, 2000, Dolan et al, 1999, Ratcliffe, 2000, Tsuchiya et al. 2003). The strong evidence in favour of giving high priority to children is consistent with the utilitarian view that insists on the maximisation of the number of expected years left to live.

Maximising the number of expected years left to live implies that the relative value of people saved in different age groups would correspond to the ratio between the life expectancy in years between these age groups. For example if a 10-year old has 70 years left to live and a 50-year old has 35 remaining years, the relative value of a statistical life is equal to 2. In other words saving 2 50-years-old would be considered to be the same as saving 1 10 year-old. The maximisation of expected years left to live approach puts equal weight on each year saved, whatever the age at which it occurs. Fair innings relates to the fact that each individual should have a certain number of years in good health (Williams, 1997). Contrary to the equal weight given to each year in the maximisation of expected years to live approach the fair innings approach attaches decreasing weights with increasing age to each year saved. Thus the relative value of statistical life between an older and a younger age group is higher in the fair innings approach than in the pure ratio of life expectancies that is used in the expected years to live maximisation approach.

The exact relative values of a statistical life in the fair innings case will, of course, depend on the weights applied to different ages. The productivity argument has been discussed by Murray (1996) and the age weights suggested relate to productivity. In contrast to the maximisation of the expected number of years left to live and from the fair innings rationale, the productivity argument focuses on the social consequences of saving a life. This can either relate to individuals' productivity in society or to the externalities occurring in a narrower social group such as the household. The society-wide productivity approach gives a higher relative value to people in the age of employment, and hence a lower relative value on younger and older people who are considered as social dependants. An analogous argument can be put forward for productivity within the household: considering that adults tend to contribute more to household production, they can be given a greater value. The productivity argument would result in relative values of statistical life between very young and very old people roughly corresponding to the ratio in life expectancies. Moreover, the relative values of statistical life between young and

middle-aged people obtained by the productivity method will be lower than the relative values obtained from the ratio of life expectancies, while they will be higher between the middle-aged and the elderly.

1.3 How to assess preferences in age and disentangle their rationales.

In our paper we are primarily interested in assessing whether individuals have preferences for relative values of statistical lives in the age dimension. Since preferences for saving groups of individuals of a given age may underpin different rationales, respondents might confuse age with other factors. In order to assess what might influence preferences for saving individuals belonging to one age group rather than another, we need to control for both household composition and gender. Household composition is in fact a measure of the social productivity and gender allows us to enquire further into both the efficiency argument (maximisation of number of expected years left to live) and the fair innings approach. In fact, if people want to decide whose life to save in accordance with the principle of maximising the number of expected years left to live, then they should prefer saving women to men since the former live longer.

In our case, we elicit individuals' preferences about whom to save when there are two life-saving programmes to choose between, by using a choice experiment (see e.g. Alpizar et al., 2003, and Louviere et al., 2000). In the choice experiment, the respondents are asked to choose one of two alternatives that are presented to them. Each alternative corresponds to a life-saving programme that targets a group of individuals that is homogenous in terms of its socio-economic characteristics, and would save a specific number of individuals. In the choice experiment the respondents are presented with ten binary choices. Thus, the estimation of the respondents' preferences is based on repeated pair-wise choices between different life-saving programmes. In

addition to providing information on the number of saved individuals out of all those treated by the programme, the socio-economic characteristics of the target group were also presented: age, gender and household composition with respect to the number of children and of adults. Based on estimated parameters, relative values of statistical lives in one or several of the various dimensions of age, household composition and gender can be obtained.

In order to conduct our choice experiment, we need a description of the situation about which we are asking the choices to be made. Previous research has indicated that the type of risk at issue, in particular, the extent to which the risk is foreseeable and/or voluntary, does influence the choice between different life-saving programmes (e.g. Mendeloff and Kaplan, 1989, Slovic et al., 1985, Subramanian and Cropper, 1999, and Sunstein, 1997). Moreover, empirical indications that preferences for saving lives depend on the causes of the accident or of the disease also exist, which means that different types of life-saving programme result in different relative values (e.g. Cookson, 2000, Jones-Lee et al., 1985, and Subramanian and Cropper, 1999). For these reasons, we fixed the cause of death to be the same in all of the alternatives and we specify it as being totally beyond each individual's control. Provision of information on the specific cause of death also avoids speculative conjectures that might attempt to correlate specific causes of death with the age of the individual. The scenario describes a case of poisoning, which comes unexpectedly and results in an almost instantaneous death, and respondents are told that the life-saving programme presented will save a certain number of lives without those saved individuals suffering from any adverse effects. The few studies on the relative value of statistical life that have been conducted have used either a sample from Western Europe or one from the USA. In this paper we use both an Indian and a Swedish sample. Our main objective is to assess whether the relative value of a statistical life depends on age, gender and household composition. Moreover, we investigate for the possibility that the results are country-dependent.

2. Choice Experiment

In order to elicit individuals' preferences through a choice experiment, we need to describe the things about which they are supposed to express preferences. The scenario for the choice experiment was developed with the objective of presenting an involuntary and unavoidable risk and causing the same type of death irrespective of the type of individual (for the whole description of the scenario see Appendix). The scenario presented to the respondents describes a case in which a small risk of contracting a deadly poisoning exists. The risk of being poisoned is small, but as soon as poisoning has taken place it leads to a painless but almost instantaneous death. This statement has two objectives. First, it was conceived to make the respondents focus on the effects of saving individuals from death alone and thus we explicitly ruled out cases of uncertain consequences of infection and intermediate morbidity status such as disability. Secondly, by saying that the death was instantaneous and painless we wanted the respondents to focus on the very fact of saving lives and thereby reducing all the unpleasant possibilities related to the circumstances of infection such as the duration or intensity of suffering.

In order to study whether preferences endorse concerns for saving as many lives as possible, we introduced the number of individuals saved as an attribute of the program. In addition, to studying whether the efficiency aspect is traded-off with other considerations, the saved individuals are described by age and gender as well as by household composition in terms of the number of children and adults. We discuss in turn the rationale for introducing each attribute. Depending on the definition of productivity, it can either relate to individuals' productivity in society or to the externalities occurring in a narrower social group such as within their household. For instance, a 5-year old individual and a 40-year old individual do not contribute equally to the family's production. A 40-year old is often one of the breadwinners in the

household, while a 5-year old needs to be supported by a member of the household. Thus, saving a 40-year old individual rather than a 5 year-old has different impacts. The general argument behind the productivity view is that different stages of life are associated with different capacities for contributing to others' well-being, and that the early and the later stages correspond to periods of greater social dependency for most human beings. Since intergenerational insurance and social practices of mutual support between people at different stages of life are well-known facts of both traditional and modern economies, internal household interdependencies may matter in the decision of whose life to save.

To summarise, in our experiment we use four different attributes: age, gender, household composition and efficiency as measured by the number of lives saved, and these are summarised in Table 1. In order to be able to estimate how each of them affects the choice made in a pair-wise choice set, each attribute needs to be assigned a level. In the choice experiment we included six different age groups; 0, 10, 25, 40, 50 and 60 years of age. Moreover, we specified households as consisting of 2 adults with either 0, 1, 2 or 3 children or 1 adult and 1 child. Alternatives are presented as though the saved individual is to be one of the household members that are presented. In addition we included the gender of the individuals saved.

Table 1. Attributes in the choice experiment

Attributes	**Attribute levels**
Age	0, 10, 25, 40, 50, 60
Gender	Male, female
Household composition	2 adults and 0 children
	2 adults and 1 child
	2 adults and 2 children
	2 adults and 3 children
	1 adults and 1 children
Number of individuals saved out of 15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13

In the choice experiment we use 10 choice sets, an example of which is presented in Table 2. A crucial issue in a choice experiment is how to combine the attribute levels into the choice sets. The combinations of possible profiles in the choice experiment were found by using a D-optimal design approach and we created four blocks with 10 choice sets in each (e.g. Carlsson and Martinsson, 2003 and Zwerina et al, 1994).

Table 2. Example of a choice set.

	Alternative A	Alternative B
Age of the entitled individuals	10	60
Gender of the entitled individual	Male	Female
Household composition of the entitled individual (including the entitled individual)	2 adults and 3 children	2 adults and 2 children
Number of saved individuals	(5 out of 15)	(10 out of 15)

Let us assume that the respondents act as social planners who maximise their own individual social welfare function (see e.g. Arrow 1963, Harsanyi 1955,). The life-saving programme is described in terms of the number of recipients saved, and by the personal characteristics of the recipients. A respondent *i*'s social welfare function can be presented as follows

$$W_i = W_i(S_1,...,S_n,\Omega), \tag{1}$$

where S_k describes the number of people alive in group *k,* defined by a number of personal characteristics, and Ω is a vector describing other aspects of the state of the world. As long as the changes are small, we can write the respondent's social welfare function as a function of changes in the number of people alive in each group when a public life-saving programme is implemented such as

$$W_i = \hat{W}_i + \frac{\partial W_i}{\partial S_1} dS_1 + ... + \frac{\partial W_i}{\partial S_n} dS_n , \tag{2}$$

where $\hat{W}_i$ is social welfare at status quo (that is, before that the programme is implemented), and $\frac{\partial W_i}{\partial S_k}$ indicates the marginal effect on the respondent's social welfare function when saving an individual from group *k*. Group *k* is defined by three attributes : age, gender and household composition. If the respondent's social welfare function is linear in attributes, from equation (2), we can express the following:

$$W_i = \hat{W}_i + \frac{\partial W_i}{\partial S_k} dS_k = \hat{W}_i + b_{iage_k} N_k + b_{ifam_k} N_k + b_{imale_k} N_k \,, \tag{3}$$

where N_k denotes the number of individuals saved in group *k* by the programme.

If we generalise equation (3) to include all attribute levels presented in Table 2, we obtain

$$W_i = \hat{W}_i + \sum_{m=1}^{6} b_{im} AGE_m N_m + \sum_{m=7}^{13} b_{im} FAM_m N_m + b_{iM} MALE_m N_m \,. \tag{3'}$$

Since we are primarily interested in the relative value of life as far as it concerns the age of saved individuals, we created six dummy variables, denoted AGE_m, to indicate each of the age groups included in the choice experiment. The variable AGE_m takes the value 1 if the saved individuals come from age group *m*, and zero otherwise. N_m indicates the number of individuals saved in group *m*. Furthermore, we consider different household compositions (FAM_m) gender ($MALE_m$). These effects are introduced as a shift from a reference level. The reference case was chosen to be females coming from a household with two adults and two children. Thus, the coefficients on age indicate the effect, on an respondent's welfare function, of saving an additional individual from age group *m* conditional on the additional saved individual being a female coming from a household with two adults and two children. The household composition enters the social welfare function according to the age of the recipients. If recipients are in the age groups of 0 or 10, it is assumed that they are one of the children in the household, or perhaps

the only one. Thus, three dummy variables are created: (i) child in a household of 2 adults and 1 child, (ii) child in a household of 2 adults and 3 children and (iii) child in a household of 1 adult and 1 child; the base case is a child in a household of 2 adults and 2 children. Similarly, we created four dummy variables in relation to the composition of the household from which the adult comes; (i) adult in a household of 2 adults and 0 children, (ii) adult in a household of 2 adults and 1 child, (iii) adult in a household of 2 adults and 2 children and (iv) adult in a household of 2 adults and 3 children. The base case is an adult in a household with 2 adults and 2 children. These seven variables are included in the vector named FAM_m. Finally, we separated saved males from females by using the dummy variable $MALE_m$.

In a pair-wise choice experiment, respondents are asked to choose one programme from two options. Because there may be factors affecting the choices that are unobservable to the researcher, we use the random utility maximisation theory framework (McFadden, 1974). Thus, the respondent's social welfare function is assumed to comprise a systematic component V_i and a random component ε_i, where V_i relates to the measurable part of utility and ε_i captures the unobservable effects of omitted and/or unobservable variables. Thus, the respondent's social welfare function when programme *s* is considered may be written as

$$W_{is}(S_{is},\Omega)=V_{is}(S_{is},\Omega)+\varepsilon_{is}\,. \tag{4}$$

In the experiment, the respondents are asked to choose one programme out of two. The difference between programme *1* and programme *2* in choice set *r* for respondent *i* may be written as

$$\Delta W_i = W_{i1} - W_{i2} = V_{i1}(S_{i1},\Omega) + \varepsilon_{i1} - V_{i2}(S_{i2},\Omega) - \varepsilon_{i2}\,. \tag{5}$$

By inserting equation (3') into equation (5). We obtain the following econometric specification

(6)

$$\Delta W_i = \sum_{m=1}^{6} b_{im}(AGE_{m1}N_{m1} - AGE_{m2}N_{m2}) + \sum_{m=7}^{13} b_{im}(FAM_{m1}N_{m1} - FAM_{m2}N_{m2}) + b_{im}(MALE_{m1}N_{m1} - MALE_{m2}N_{m2}).$$

Since the respondent makes a binary choice, we only observe the chosen alternative, not the difference in utility. Let us assume that we code the dependent variable, W_{ir*}, one if respondent *i* chooses programme 1 in choice set *r* ($\Delta W_{ir} > 0$) and zero otherwise ($\Delta W_{ir} \leq 0$). Assuming that the difference between the error terms in equation (6) is normally distributed, we may estimate the parameters of the model by using a probit model.

For policy purposes it may be of interest to calculate the relative value of statistical life between age groups, household compositions and genders. and attribute levels. The ratio expresses the relative value of life between two specified groups that is obtained by combining attributes of age, gender and household composition. Based on equation (6), the relative value of statistical life for any two groups *g* and *h* is derived by setting the difference in welfare equal to zero and fixing the number of saved individuals in one of the groups. The relative value of statistical life between the groups *g* and *h* is thus obtained as:

$$RVSL = \frac{b_{AGEg} + b_{FAMg} + b_{GENDERg}}{b_{AGEh} + b_{FAMh} + b_{GENDERh}}. \quad (7)$$

3. Results

Our survey was conducted in both India and Sweden. In Delhi, India, we recruited students from three different universities, while in Gothenburg, Sweden, we recruited them from one university. We gathered data from 133 participants in Delhi and 107 participants in Gothenburg. Table 3 and table 4 summarise the relative values of statistical lives for our Indian and Swedish sample separately. In each sample we decided to make the recipients with the highest relative value of statistical life our reference group. In the Indian sample, table 3, the reference group for calculating RVSL is a 10 year-old female who is the only child in a household with only one adult. This group is assigned the relative value of a statistical life equal to one. In table 4, the Swedish sample, the reference group is a 10-year old boy from a household consisting of 2 adults and 3 children, where he is one of the three children. In principle, it could be that respondents have preferences such as a life is a life. To ascertain whether this is the case, we perform a test to establish whether respondents have preferences such as a life is a life before the econometric analysis. The test is done by seeing whether respondents always picked the alternative that saved the most lives. Around 14% of the Indian respondents and 13% of the Swedish always selected the alternative saving most lives. The relative values of statistical life are calculated using equation 7, and the coefficients used are based on separate regressions for each country separately (see equation 6). The results of the econometric estimations are not used per se and therefore they are reported in the appendix. In the econometric analysis we need to take into consideration the fact that each respondent makes 10 choices, i.e. there is clustering at the respondent's level, and thus that the assumption of independence of observations is violated. As a result of this, the standard errors may be smaller than they would otherwise have been in the case of independent observations. In order to handle the clustering effect on the standard errors, we use the cluster estimator in STATA (see STATA, 2003b).

The rows in the tables indicate the age of the recipients, while the columns refer to the household composition from which the recipient comes. In table 3, the reference group for calculating the relative value of a statistical life is a 10-year old female recipient, who comes from a household consisting of one adult and one child (herself). All other values are expressed with respect to this reference group and the number in any other cell in table 3 is thus the relative value of a statistical life between the socio-economic characteristics of individuals in this group and the reference group. For instance, the 2.494 in the first row and first column of table 3 should be interpreted as respondents in India being indifferent between saving 2.494 0-year old males living in a household with 1 adult and 1 child and saving 1 10 year-old female living in a household of 1 adult and 1 child. We test whether the obtained relative values of statistical life are statistically different from the reference group by using a Wald test. With this we test the null hypothesis that the relative value of statistical life is equal between a group and the reference group. This test is conducted on each group separately (see STATA, 2003). RVSL is read in a similar way in table 4.

Table 3. Relative value of statistical life in the Indian sample.

	Male					Females				
Age	1+1	2+1	2+2	2+3	2+0	1+1	2+1	2+2	2+3	2+0
0	2,494*	4,960	2,999	8,460		2,310**	4,282	2,738	6,663	
10	1,033	1,301	1,111	1,459		1,000	1,249	1,073	1,394	
25	1,721**	1,726**	1,815***	1,349	1,899**	1,632**	1,636**	1,716***	1,293	1,791**
40	1,849**	1,854**	1,958**	1,426	2,056**	1,746**	1,751**	1,843**	1,364	1,929**
50	3,010**	3,024**	3,310**	2,030**	3,600**	2,746***	2,758**	2,994**	1,906*	3,230**
60	2,117***	2,124**	2,261***	1,580*	2,393**	1,983***	1,989**	2,109***	1,504	2,224***

Note. The reference group is composed of 10 year-old females from a household consisting of 1 adult and 1 child. Superscripts *, **, *** denote statistical significance at 10%, 5%, and 1% level, respectively.

Table 4. Relative value of statistical life in the Swedish sample.

	Male					Females				
Age	1+1	2+1	2+2	2+3	2+0	1+1	2+1	2+2	2+3	2+0
0	1,545***	1,436	6,013	1,143		1,715***	1,581	9,770	1,233	
10	1,295*	1,217	3,430	1,000		1,412*	1,320	4,394	1,068	
25	1,255	1,585**	1,214	1,113	1,411**	1,364**	1,764***	1,317**	1,198	1,551**
40	1,476**	1,954***	1,420**	1,284	1,697***	1,630***	2,233***	1,562***	1,398**	1,904***
50	2,422***	4,047***	2,275***	1,944***	3,080***	2,866***	5,461**	2,662***	2,220***	3,836***
60	2,925***	5,683*	2,714***	2,256***	3,944**	3,599***	8,928	3,284***	2,636**	5,275*

Note. The reference group is composed of 10 year-old males from a household consisting of 2 adults and 3 children. Superscripts *, **, *** denote statistical significance at 10%, 5%, and 1% level, respectively.

A general remark is on the similarities between the patterns of RVSL in India and in Sweden. In both countries, the life of a 10-year old is assigned the highest relative value. Moreover, Indian and Swedish respondents generally give a higher relative value to a saved individual coming from a household with two adults and three children, in comparison with other household compositions. Table 3 shows that in India, adults of 25 years or more have a significantly lower relative value of a statistical life than the 10 year-old of the reference group, unless they come from a household with two adults and three children. Similarly, in Sweden, the lives of the ten year-olds of the reference group are valued significantly higher than those of people who are 25 years old or more. It should however be noted that 25 year-olds are statistically different from the reference group in 6 cases out of 10, while there is a significantly lower relative value for older saved people in households with 2 adults and 3 children. As far as the RVSL between the two age groups of children in India is concerned, the life of a newborn is valued less than the life of a 10 year-old. It is difficult to know if a high rate of child mortality induces these preferences. It may reflect that if a child has reached the aged of 10, then it starts to become increasingly

important for the future of the household. Although there are substantial differences between the relative value of statistical life of new-borns and 10 year-olds in many cases, few of the relative values of statistical life for new-borns are significantly different from those for 10 year-olds, which may indicate heterogeneous preferences among respondents.

Tables 3 and 4 also provide the preference *profiles* for the dimensions of age and of household composition[1]. Columns represent the age-related preference profiles, when both the household composition and the gender of the recipients remain constant. Rows express the household composition-related preference profiles, conditional on a specific age and gender of recipients. We can normalise each column by calculating the relative value of statistical life using equation (7), or more easily by using the values presented in tables 3 and 4 to calculate the ratios. For instance, an Indian respondent is indifferent between saving 1 10-year old and 2.414 (2.494/1.033) new-borns, conditional on the fact that both groups consist of males from a one-parent single-child household. The main finding on the age-preferences profiles of relative value of statistical life seems to be U-shaped with a minimum, i.e. highest relative value, around the age of 10 to 25 in both the Indian and the Swedish samples. However, the shape is flatter in the Indian case. Investigation into the age-profiles gives the following result. We find that in most cases the age groups 40 to 60 are statistically significant to the reference group in Sweden when analysed separately for each combination of household composition and gender. In the Indian case, the age profile is more related to household composition and we find statistically significant differences such that 10 year-olds are statistically significant at 10% level from all other age groups both in the single-adult household with one child, and the household with two

[1] The corresponding tests for age and household composition are reported in the Appendix in tables X1, X2, X3 and X4. The results of the tests are commented in the main text. Details of how to read the test tables are also in the Appendix.

adults and two children, except for that of the new-born (on the basis of Wald tests). In general, however, the age profile is less significant.

In a similar way, we can analyse the effect of different household compositions for a specific age group and gender by studying the RVSL in a row. For instance, an Indian respondent is indifferent between, given a newborn boy, saving 1 coming from a one-parent single-child family and 1.98 (4.96/2.494) new-borns coming from a two-parent, single-child family. This provides insights into welfare interdependency effects behind the RVSL. Along these lines, it is important to distinguish between profiles in children's welfare interdependence and profiles in adults' welfare interdependence. The children's welfare interdependence preference profiles are given by the first two rows, while the adults' welfare interdependence preference profiles correspond to the last four rows. The children's welfare interdependence profiles express the difference in value between saving a child in a large household and saving a child in a smaller one. It can roughly be interpreted as a marginal social utility gain, whose magnitude indicates the existence and the relevancy of the social insurance effect. Everything else being equal, when the number of children increases, the RVSL should decrease as the need for providing assistance or help within the family is lower. The newborn and the 10 year-old welfare interdependence profiles should then be decreasing with the number of children, or, stated differently, the RVSL of children should be higher for larger households. A similar interpretation can be sketched for the adults' welfare interdependence-profiles. The welfare interdependency for adults measures the necessity of taking care of children. As such, the RVSL of saving adults should increase with the number of children. Table 3 indicates that for India, the household composition does not matter significantly for the decision of saving one life. This is confirmed in a separate Wald test for each household composition, where we create a unique reference group for each age group and gender. We test the relative values of statistical life for each group against the group with the

highest relative value, i.e. the null hypothesis such that the ratio between the relative values of statistical life between age groups is equal to one. The only significant effect for children welfare interdependency was found in the Swedish sample for the two parents and three children household. Children coming from this family are given a higher relative value of statistical life in comparison with children coming from a single parent single child household. This finding is not in line with the social insurance effect (for which the relative value of statistical life should decrease with the number of children). However, this is not surprising given the extensive social insurance coverage in Sweden.

The gender effect does not prove to be significant in the Indian sample. There is a similar effect in the Swedish sample, although there is a slightly higher magnitude for the relative value given to males. The latter may in fact be due to the difference in life expectancy for women and for men in Sweden, which is around 4.5 years. In India this difference is lower, being approximately 2 years. Moreover, it is possible that Indian features also reflect the willingness to discriminate positively towards women due to their poorer, on average, health status (the difference in the number of expected healthy years to live at birth between males and females is India is almost zero; in Sweden this is around 3 years in favour of women; see tables from WHO, 2004a and 2004b, in Appendix).

In Table 5 (Appendix) we present the remaining life expectancy at different ages in India and in Sweden. The high child mortality in India is clearly shown, as the remaining life expectancy is actually two years more at the age of 10 than at the age of 0, i.e. new born. Moreover, the ratios between the life expectancies of different age groups shows the relative value of statistical life and in order to make a comparison easier between the RVSL obtained in our experiment and life expectancy, we set the reference age to 10 years.

Finally, we conduct a Wald test for each of the age profiles obtained in the choice experiment, for the two genders and the various household compositions, with the relative values of statistical live based on actual life expectancy. The null hypothesis is the equality between the relative value of statistical life as calculated through estimations and the relative value of statistical life as based on life expectancies. We cannot reject the null hypotheses in 3 out of 46 cases in the Indian sample and in 5 out of 46 cases for the Swedish sample. Thus, the age profile that is obtained from the choice experiment seems to follow the relative values of life expectancy.

4. Discussion and conclusion

This study has empirically investigated individuals' social preferences for the relative value of statistical life with respect to age, when controlling for household composition and gender. By conducting a choice experiment between different life-saving programmes, using the same experimental design in both India and Sweden, we could explore whether there are cross-country differences in the social preferences for relative values of statistical life. From our results, no important country-specificity effect emerged, rather there are indications that social preferences are similar in both countries.

In the choice experiment we found that individuals do have preferences for different relative values of statistical lives related to age. However, the magnitude of the relative values that we find is much lower than that obtained by Cropper et al. (1994) and Johannesson and Johansson (1997). One explanation could be given by the fact that we used a different approach to elicit preferences. We used a choice experiment, where the respondents made repeated choices

between two different life-saving programmes, rather than a single-question as used in the aforementioned studies. Kahneman et al. (1999) argue that the choices elicited through a framework which constrains judgement, may indicate attitudes or value expressions rather than actual trade-offs between the alternatives presented. Thus, in a single-question, respondents may, for example, choose the alternative in which younger people are saved without really considering the number of individuals that would be saved by each programme because they desire to express the view that younger individuals should be given higher priority. In a choice experiment, the respondents are allowed to express a more nuanced view since they make several choices. A related issue, then, is that the relative values obtained from a single-question approach are typically more sensitive to the levels of the attribute included (compare the literature on the design of contingent valuation in e.g. Alberini, 1995). Other differences are that we specify the household composition and gender of the recipients as well as the type of life-saving programme since they could all be correlated with age preferences. Thus, these effects must be disentangled and controlled for. As shown by Cookson (2000), Jones-Lee et al. (1985) and Subramanian and Cropper (1999), people seem to have preferences for different types of life-saving programmes, e.g. saving 1 individual from death from air pollution or cancer death is stated to be equal to saving 2 to 3 deaths from car accidents.

Interestingly, the relative values of statistical life between two age groups based on the choice experiment closely follows the relative value of statistical life calculated from life expectancy between the same age groups in both the Indian and Swedish samples. This supports the maximisation of the expected number of years left to live approach. It may also support the fair innings approach if the differences in the weights used at different ages is small. In Tsuchuiya et al (2003) an explicit question on the reason for ranking priority between different age groups was asked, and 66% stated that their main reason was either fair innings or maximisation of health.

The remaining stated productivity, where two thirds of them expressed the view that benefit to society was the most important thing. However, our results do not find significant support for the productivity argument.

Our findings foster the debate as to whether relative value of statistical life should be considered in public policy-making. According to our results, incorporating relative value of statistical life in an economic valuation could yield different recommendations for investments and regulations. In the case of Sweden where, for example, the Swedish Road Authority relies heavily on a cost-benefit approach to make their investment decisions, using our findings would in this case favour younger people. Another area for public interventions is the health care sector. The Swedish Health Care Act of 1982 states that the primary objective is to provide "good health and care on equal terms for the entire population". In 1995 a government committee presented a report on priority setting in health care in which it states three main principles for priority setting. They are, in order of importance; the principle of equal value whereby an individual's social position or personal abilities should not matter, the principle of need implying that resources should be allocated where needs are greatest and the principle of efficiency whereby resources should be allocated where the relationship between efficiency (measured in terms of improvement in health) and cost is at its highest (see SOU, 1995). Clearly, the personal characteristics of the recipients should not have any bearing on priority-setting in the health care sector in Sweden. In India, by contrast, official legislation does contain explicit indications about the necessity for policy guidelines on priority-setting: "The Constitution of India envisages the establishment of a new social order based on equality, freedom, justice and the dignity of the individual. It aims at the elimination of poverty, ignorance and ill-health and directs the state to regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties, securing the health and strength of workers, men and women,

specially ensuring that *children are given opportunities and facilities to develop in a healthy manner* (National Health Policy Government Ministry Of India)". Indeed, the extremely poor health conditions of children in this country are a well-known and serious issue for Indian society as a whole, as the respondents' views that are discussed in this paper clearly express.

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APPENDIX

1. The questionnaire.

Scenario

Let us assume the following situation: in a region of India there is a very small chance of dying from poisoning caused by chemical pollution. This poisoning results in an almost instantaneous, but painless, death once an individual has been contaminated. The probability of being contaminated is the same for all individuals living in the region. An expensive treatment to counter the poisoning exists but, since the funding is limited, prioritisation is necessary. There are two possible treatment programmes, both of which cost the same. In order to be both fair and practical, each program exclusively targets individuals of the same age and gender who come from households with the same composition. Both age and gender determine the specific kind of treatment needed as well as the effectiveness of the treatment. Effectiveness is measured by the number of individuals who are saved. The treatment is either 100% effective or not effective at all, depending on the innate strength of individuals. Apart from age, gender and household composition, individuals receiving treatment are similar in all aspects.

You will be asked to give your opinion about two alternative treatment programmes by being confronted with 10 pair-wise alternatives. In each pair-wise choice you will be asked to say which treatment programme you prefer. An example of this is presented below:

Example

	Alternative A	Alternative B
Age of the entitled individuals	40	20
Gender of the entitled individual	Male	Female
Household composition of the entitled individual (including the entitled individual)	2 adults and 2 children	1 adult and 0 children
Number of saved individuals	12 (out of 15)	8 (out of 15)

	Alternative A	Alternative B
Your choice (tick one box only)	☐	☐

Alternative A entitles 15 40-year old males who live in a household with 2 adults (one of whom is the individual under consideration) and 2 children to be treated. 12 of these 40-year old males will be saved. On the other hand, alternative B entitles 15 20-year old females who live in a household with 1 adult (herself) and 0 children to be treated. 8 of these 20-year old females will be saved. If you prefer alternative A please tick the left box and if you prefer alternative B please tick the right box.

When you fill in the questionnaire, please feel free to go back and change earlier responses if you wish to do so.

2. Probit estimations.

	India		Sweden	
Variable	Coefficient	Standard error	Coefficient	Standard error
Age group (AGE)				
Age 0	0.051**	0.022	0.024	0.026
Age 10	0.130***	0.029	0.053	0.032
Age 25	0.0818***	0.012	0.176***	0.021
Age 40	0.0761***	0.015	0.148***	0.018
Age 50	0.0469***	0.013	0.087***	0.014
Age 60	0.067***	0.013	0.071***	0.013
Household composition (FAM)				
Adult 2+0	-0.003	0.012	-0.027*	0.014
Adult 2+1	0.004	0.010	-0.045***	0.014
Adult 1+1	0.004	0.009	-0.006	0.012
Adult 2+3	0.027	0.016	0.017	0.018
Child 1+1	0.009	0.024	0.111***	0.024
Child 2+1	-0.018	0.029	0.123***	0.039
Child 2+3	-0.030	0.028	0.164***	0.033
Male (MALE)				
Male	-0.004	0.006	0.015*	0.008
Number of observations		1070		1330

Note. Superscripts *,**,*** denote statistical significance at 10%, 5%, and 1% level, respectively.

3. Tests in Age and Household Composition Dimensions.

Table X1. Relative value of statistical life in the age dimension in the Indian sample.

	Male					Females				
	1+1	2+1	2+2	2+3	2+0	1+1	2+1	2+2	2+3	2+0
Age										
0										
10	*R*	*R*	*R*			*R*	*R*	*R*		
25	*		**	*R*	*R*	**	*	**	*R*	*R*
40	*					*		*		
50						*				
60	**		**			**		**		

Note. Table has to be read as follows. The test indicates if the relative value of statistical group of the reference group (which is the highest) is significantly different from any other group. Here the test is run with-in columns, that is for age-groups. For instance, in the first column of table X1 the 10 years old of a single-parent single-child household is given the highest relative value of statistical life (indicated with a R). The test shows that 25 years old, 40 years old and 60 years old individuals coming from a single-parent single-child household are given a significantly lower value.

Table X2. Relative value of statistical life in the age dimension in the Swedish sample.

	Male					Females				
	1+1	2+1	2+2	2+3	2+0	1+1	2+1	2+2	2+3	2+0
Age										
0	*					*				
10	*R*	*R*		*R*			*R*		*R*	
25		*	*R*		*R*	*R*	*	*R*		*R*
40		**		*			**		*	
50	**		***	***	*	***		***	**	*
60	*		***	**				***	*	

Note. See previous table.

Table X3. Relative value of statistical life in relation to the household composition in the Indian sample.

	Male					Females				
	1+1	2+1	2+2	2+3	2+0	1+1	2+1	2+2	2+3	2+0
Age										
0	*R*					*R*				
10	*R*					*R*				
25				*R*				*	*R*	
40				*R*					*R*	
50				*R*					*R*	
60				*R*					*R*	

Note. Table has to be read in a similar way that tables X1 and X2. The test indicates if the relative value of statistical group of the reference group (which is the highest) is significantly different from any other group. Here the test is run with-in rows, that is for household composition-groups. For instance, in the first row of table X3 the newborn of a single-parent single-child household is given the highest relative value of statistical life (indicated with a R). The test shows that newborn coming from different household compositions (be 2+1, 2+2, 2+3 or 2+0) are not given a significantly different relative value of statistical life.

Table X4. Relative value of statistical life in relation to the household composition in the Swedish sample.

	Male					Females				
	1+1	2+1	2+2	2+3	2+0	1+1	2+1	2+2	2+3	2+0
Age										
0	**			*R*		**			*R*	
10	*			*R*					*R*	
25		*		*R*			*		*R*	
40		*		*R*			**		*R*	*
50		*		*R*	*				*R*	*
60				*R*					*R*	

Note. See previous note.

4. Tables from WHO.

Population estimates		
Indicator	**INDIA**	**SWEDEN**
Total population (000), 2002	1,049,549	8,867
Annual population growth rate (%), 1992 to 2002	1.8	0.2
Dependency ratio (per 100), 2002	62	55
Dependency ratio (per 100), 1992	68	56
Percentage of population aged 60+ years, 2002	7.7	22.9
Percentage of population aged 60+ years, 1992	6.9	22.4
Total fertility rate, 2002	3.1	1.6
Total fertility rate, 1992	3.8	2.0

Health indicators, 2002				
Indicator	Mean	Interval	Mean	Interval
Life expectancy at birth (years)				
Total population	61.0		80.4	
Males	60.1	59.4 - 60.8	78.0	77.7 - 78.3
Females	62.0	61.1 - 62.8	82.6	82.4 - 82.9
Child mortality (probability of dying under age 5 years) (per 1000)				
Males	87	81 - 92	4	4 - 5
Females	95	86 - 106	3	3 - 3
Adult mortality (probability of dying between 15 and 59) (per 1000)				
Males	291	268 - 314	83	80 - 85
Females	220	197 - 243	53	51 - 55
Healthy life expectancy at birth (years)				
Total population	53.5		73.3	
Males	53.3	52.5 - 54.1	71.9	71.2 - 72.5
Females	53.6	52.7 - 54.6	74.8	74.0 - 75.5
Healthy life expectancy at age 60 (years)				
Males at age 60	10.8	10.6 - 11.0	17.1	16.8 - 17.4
Females at age 60	11.4	11.0 - 11.8	19.6	19.3 - 19.9
Expectation of lost healthy years at birth due to poor health (years)				
Males	6.8		6.2	
Females	8.4		7.9	
Percentage of total life expectancy lost due to poor health (%)				

Males	11.3		7.9	
Females	13.6		9.5	

Selected national health accounts indicators

Indicator	INDIA	SWEDEN
Per capita GDP in international dollars, 2001	1,560	25,981
Total health expenditure		
Total expenditure on health as % of GDP, 2001	5.1	8.7
Per capita total expenditure on health at average exchange rate (US$), 2001	24	2,150
Per capita total expenditure on health in international dollars, 2001	80	2,270
Public health expenditure		
General Government expenditure on health as % of total expenditure on health, 2001	17.9	85.2
General Government expenditure on health as % of total general government expenditure, 2001	3.1	13.0
Per capita government expenditure on health at average exchange rate (US$), 2001	4	1,832
Per capita government expenditure on health in international dollars, 2001	14	1,935
Sources of public health expenditure		
Social security expenditure on health as % of general government expenditure on health, 2001	n/a	.0
External resources for health as % of total expenditure on health, 2001	.4	.0
Private health expenditure		
Private expenditure on health as % of total expenditure on health, 2001	82.1	14.8
Sources of private health expenditure		
Prepaid plans as % of private expenditure on health, 2001	n/a	.0
Out-of-pocket expenditure on health as % of private expenditure on health, 2001	100.00	100.00

(Source : WHO, 2004)

5. Table 5 : Remaining life expectation at different ages (India and Sweden).

	India		Sweden	
Age	Remaining life expectation at different ages	Ratio of remaining life expectancy at specific age and life expectancy at age 10	Remaining life expectation at different ages	Ratio of remaining life expectancy at specific age and life expectancy at age 10
0	61	1.03	79,65	0.88
10	63	1	70,015	1
25	50	1.26	55,295	1.27
40	37	1.70	40,725	1.72
50	28	2.25	31,315	2.24
60	20	3.15	22,455	3.12

Social Preferences on Public Intervention: an empirical investigation.

by

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Keywords: Social Preferences, Self-interested Preferences, Demand for redistribution

Abstract.

In this paper we discuss alternative models of social preferences by examining the support given by French households to the government intervention for reducing inequalities and improving well-being of the low-income classes. Starting from the test of the basic model of self-regarding preferences, we discuss to what extent this model could be relied upon when one wants to take into account social norms to explain the individual demand for redistribution. Our main findings are the following: the income is not a good predictor of individual demand for redistribution, with very few exceptions among the higher income classes who showed to be less supportive of the redistribution. Second, we found that social beliefs matter for explaining the individual attitudes towards public intervention and more specifically, that values such as personal responsibility and exogenous bad luck respectively provide a rationale for justifying low and high levels of redistribution. Finally, we tested the reciprocity motive by analysing how the requirement of a counterpart to public solidarity affects the support given to redistribution. We found that depending on how reciprocity norms interact with beliefs about the causes of poverty, the support given to redistribution can increase or decrease.

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1. Introduction.

A standard assumption in the models of optimal taxation is that only those who expect to draw a net benefit from it adhere to public redistribution. Thus the individual demand for redistribution depends negatively on the contributions that agents actually pay and positively on benefits they expect to get from the public redistribution (Sinn, 1995; Barr, 1992).

Two kinds of theoretical framework produce such a result: the median voter model of income taxation and the social insurance model. Both approaches rely on the *homo economicus* assumption, i.e. on agents endowed with outcome oriented, self-regarding preferences. In the first kind of model, when the median voter's income is less than the mean income, she will agree with a redistributive policy which consists of lump-sum transfers financed by a linear tax on incomes (Meltzer and Richard, 1981). In the second kind of model, redistribution works as a social insurance device and thus can benefit all those individuals who are likely to suffer from negative idiosyncratic shocks (Moene and Wallerstein, 1996). As a consequence, the demand for redistribution is positively correlated to the degree of risk the individual feels to be exposed to.

The standard framework has been challenged by a number of theoretical and empirical works that have shown that, as far as social distributional outcomes are concerned, individual preferences would incorporate some not self-interest variables. Traditionally, two families of models have been proposed to formalize the idea that individual preferences are not only defined over levels of personal well-being: the models which focus on the norms of altruism and the models which put forward the social rivalry effect. In the first class of models (Hochman and Rodger, 1969; Luttmer, 2001), individuals do care about the others so that, under certain conditions, the redistribution from the high-income classes towards the low-income classes is Pareto-improving, as it enhances the well-being of both beneficiaries and taxpayers. In the second class of models (Akerlof, 1997; Corneo and Grüner, 1996), individual compares himself both to the individuals belonging to the social classes that are better-off than his own reference group, and to the ones that are worst-off of his reference group. His well-being decreases when the redistribution makes his reference group closer to the worst-off group, all other things being equal. This may explain why individuals could oppose redistribution.

A new generation of models extends the set of rationales which may justify the demand for the redistribution. In particular, beliefs about the key-determinants of socio-economic achievements and views of social justice might explain why one could support redistribution

even when this does not bring any material advantage (Piketty, 1995; Corneo and Grüner, 2002). New and old models have been tested in some empirical studies, which found contrasting evidence on the motivations behind the individuals' demand for redistribution. In particular, Fong (2001) pointed out that " income is a surprisingly poor predictor of redistributive beliefs". By contrast, moral judgments about personal responsibility and external circumstances as causal determinants of one's own socio-economic outcomes can explain the individual support to redistribution.

Though Corneo and Gruner (2002) also found that social values explain consistently the demand for redistribution, they did not conclude that the self-interest rationales were irrelevant and claimed that these two effects and the social rivalry one all play a role.

Our paper provides evidence on the French case and compares these findings with those of similar studies, such as Fong and Corneo & Gruner's ones. In addition, we test another family of social preferences models, namely models which rely on the "Reciprocity" view (Bowles and Gintis, 2000; Bowles *et al.,*2004). Following this view, the generalised support to welfare system should be understood along the lines of conditional solidarity to needy individuals. A large number of tax-payers would be ready to contribute to the system, even when this is costly for them, to the extent that the other side of the redistribution (those who draw a net benefit from it) displays a willingness to cooperate. Someone acting along reciprocity standards is someone who expects that redistribution works as a fair cooperation between individuals. The reciprocity view insists that when social welfare system is designed as a fair division of advantages and burdens, it is more likely to be sustained and defended by individuals, irrespective of their personal strict (i.e. material) interest.

To discuss the relevancy of social preferences models, we analyse the individual demand for redistribution by using the French survey "Opinions about Welfare State" conducted by DREES[1] on a sample of 4000 households. We selected a number of questions where respondents had to indicate which institutions are responsible for reducing inequalities and social exclusion, and to which extent.

The use of questions is twofold: first, we select a number of questions to build an indicator measuring the desired degree of public intervention for reducing poverty and providing social solidarity; then, we run an ordered probit model on this indicator, with some socio-demographic variables and some self-interest and not self-interest variables as regressors.

[1] DREES (Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques, Ministère des Affaires Sociales, du Travail et de la Solidarité & Ministère de la Santé, de la Famille et des Personnes Handicapées).

Second, we analyse social preferences through the support given to public intervention in terms of minimal income.

The paper is structured as follows: in the first part we broadly describe the main implications for redistribution of the different models of social preferences (with respect to standard homo economicus framework). In the second part, we introduce the data set and the estimation method we make use of. The third part is devoted to the presentation of the results and to a discussion of our main findings. The fourth part concludes.

2. Some new and old models of social preferences.

2.1 The *Homo Economicus* model and the Social Insurance approach in a static framework.

An immediate application of the *homo economicus* assumption in the topic of public redistribution of incomes is represented by the Social Insurance[2] models. There exists a large literature (Eaton and Rosen, 1980; Varian, 1980; Rochet, 1991; Sinn, 1995) insisting on the interaction of ex-ante risk-taking behaviour and redistributive taxation. In Sinn's model, individuals are supposed to be at risk of an uninsurable lifetime random income loss whose occurrence is controllable by personal effort, though not completely unavoidable. Redistribution is assumed to take the form of a linear tax on market income and lump-sum transfers to be independent of the state of nature as well as on the individual effort. With such assumptions, "lucky individuals are net tax-payers and unlucky individuals net recipients of public funds", so that by reducing the standard deviation of income distribution the government achieves its insurance intervention. To the extent that individual effort is partially unobservable and that self-insurance activities—as investment in human capital—are not fully tax deductible, there is room for moral hazard, that is overtaking of risk resulting in an enhancement of pre-tax inequality.

[2] The term "social insurance" refers to the standard micro-economic framework where agents turn to redistribution as to cover themselves from idiosyncratic chocks that are neither completely avoidable nor insurable ex-ante. In France the term "social insurance" might sound ambiguous to the extent that the welfare state is a mixture of Bismarck-kind and Beveridge-kind systems, where the redistributive transfers towards the low-incomes classes are funded by both income taxes and social security contributions. So strictly speaking, the French redistributive system includes a part of insurance and a part of solidarity. However in what follows, we always use the term "social insurance" to mean the fact that support to redistribution is only motivated by personal interest, and not to indicate the way how the redistribution is financed.

2.2 Beliefs and Dynastic mobility.

Piketty (1995) uses a model where the individuals' experience of dynastic income mobility affects their evaluation of the relative importance of effort and external factors for getting ahead in life, beyond the inborn beliefs of agents. The intergenerational learning with respect to the effectiveness of personal effort in attaining a certain level of well-being determines both the agents' work effort and the public redistribution they vote for. At each period, individuals earn a certain income, which depends partially on their social origins and partially on the level of effort they supply. The level of effort is chosen according to their different beliefs about the impact of effort and luck on their odds of becoming rich or poor, while the redistributive tax rate is decided so as to maximise the opportunities of the most unlucky individuals in the society[3]. The stronger the belief that individual effort is important for obtaining economic success, the higher the costs of redistributive taxation from the rich to the poor and the less the individuals are willing to accept redistribution. However, social beliefs endogenously evolve with individual's own experience and the (imperfect) observation of how success is achieved at society level. Indeed, several possibilities of learning exist. For instance, it can happen that individuals, supplying a high level of effort and obtaining a high income, reinforce the yet-existing belief that effort explains success; conversely, low-incomes agents providing low level of efforts as a consequence of their initial belief, keep on holding the opposite belief. More interesting is the case where dynasties adhere to different standpoints, as a result of an unexpected state of affairs: it may happen that individuals of high-incomes dynasties, though putting high efforts, end up with low income. In that case, it is quite likely that they revise their beliefs and enhance their support to redistribution.

2.3 Are norms correlated to Income?

In her empirical paper devoted to the estimation of social preferences, Fong (2001) analysed the impact of the self-interest motive on the demand for redistribution, she also considered the importance of collective norms of social justice in shaping the distributive preferences of taxpayers. Following Kluegel and Smith (1986), she distinguishes between self-determination beliefs and exogenous-determination beliefs: the former corresponds to the idea that individuals are entirely responsible for getting ahead in life while the latter sustains the view that bad exogenous luck should be somehow compensated for.

[3] This means that, before the direct or indirect learning, individuals may eventually agree with the social finalities of the redistribution—that is, aimed to offset the initial bad luck.

Now, there exists a large empirical evidence from the American public opinion surveys, according to which the social schemes for the have-nots as well as the public programs for reducing inequalities are largely supported by individuals who are likely to not draw any benefit from them; however, it is not clear whether and how values and norms about distributive justice explain the 'apparently disinterested' demand for redistribution. It is possible, for instance, that the relation between income and norms is a joint one, say for instance that people who believe that the lack of effort is the only reason for indigence systematically coincide with high-income classes. In order to establish if moral judgments and beliefs in social norms operate through incomes or not, Fong firstly estimated a model on the whole sample of respondents where incomes as well as social beliefs appear as explaining variables of the support given to redistribution. Then, a similar model is estimated on separate sub-samples, according to the income of respondents. The main finding is that in the (high income) sub-samples estimation one cannot reject the null hypothesis that support to redistribution is only explained by self-determination beliefs[4] but one can reject the hypothesis that self-interest variables alone determine support to redistribution. She thus concluded that social beliefs matter for determining individuals' attitudes towards redistribution, and that is so independently of their income.

2.4 The Social Rivalry effect.

Corneo and Grüner (2002) discuss two main alternative explanations to the *homo economicu*s standard approach. In their view, the individuals' support or opposition to redistribution may be driven by public values and by social rivalry considerations. Roughly speaking the public values view refers to the aforementioned idea according to which believing in personal effort makes you asking for less redistribution. The underlying rationale varies somehow from meritocracy to a principle of proportionality between contribution and rewards. According to this view, there is no a priori link between personal income and support to redistribution. As a consequence, the public values explanation maintains that if one believes that family background, and more generally external circumstances, mainly explains economic outcome, one will be more indulgent and favourable to redistribution.

In a very different perspective, the social rivalry explanation considers that the individual's preferences for redistribution depend upon her relative social position in the distribution of

[4] Self-determination beliefs are beliefs that identify the individual's socio-economic outcomes with the moral responsibility of the individual.

incomes with respect to the others. According to this view, the preferences for redistribution depend upon the effect of the welfare state on the quality of individuals' social environment.
The social rivalry effect is especially likely to arise when public programmes have thresholds effects, as when, for instance, public schemes allow individuals to switch from the upper bounds of low-income classes into the contiguous higher income class: in that case the social shifting may generate a substantial loss of well-being for the individuals who were already in the higher income class and now become closer to lower social strata (and, at the same time, do not receive any public assistance). To empirically assess the consistency of these three explanations, Corneo and Grüner use the ISSP (1992) Module II Social Inequality Survey, which contain data of different countries on the attitudes towards redistribution and social proximity.
For establishing the relevancy of the *homo economicus* effect, they consider some proxies for the individual's net monetary gains of redistribution and measure the distance separating the individual's gross income to the average income in the individual's country.[5]
Moreover, the relationship between the dynastic mobility experience of the individuals and their views about personal responsibility in obtaining socio-economic achievements is empirically assessed through some specific questions[6]. For the test of the social rivalry effect, the professional occupation of each respondent is considered and evaluated through an index measuring its related social prestige[7]. Then the average prestige score of the income class the respondent belongs to, is computed. These averages scores are thus used as predictors of individuals' willingness to support redistribution.
The main conclusion of their study is that the determinants of redistribution are quite heterogeneous. In fact, if on the one hand « people who think income to be very elastic with respect to effort are less likely to favour political redistribution»; on the other hand, there exists also evidence that « believing in the importance of family wealth increases the probability that the individual supports a reduction of income inequality ». About Piketty's model, data are consistent with the fact that « upward mobility enhances the probability that the individual opposes governmental redistribution of income ». Finally, about the social

[5] The question was the following one: "If incomes became more equal in this country, some people would get higher incomes and some would get lower incomes. Do you think your income: 1. Will go up 2. Will go down"

[6]For that, they consider the following question: *"Compared to your father when he was your age, are you better or worse off in your income and standard of living generally?"*

[7] In order to obtain a meaningful scale of social prestige though dealing with a variety of countries, the Standard International Occupational Prestige Scale is used (SIOPS ; see Ganzeboom and Treiman, 1996).

rivalry effect, « income classes with a high prestige as compared to that of neighbouring classes are less likely to favour political redistribution ».

2.5 Norms and Reciprocity.

On the basis of the observed mismatch between theoretical predictions on the relationship between the degree of inequality and the strength of the welfare system, and the empirical evidence on such a correlation[8], Gintis and Bowles (2000) maintain that a finer understanding of egalitarian policies requires a reconsideration of the motives that lead individuals to sustain such policies. Building on a robust and wide set of experimental and empirical findings, the authors argue that the reciprocity view accounts for distributional choices in a large number of cases. The ambition of reciprocity's view partisans is to explain the political success of the welfare state by the comprehensively observed fact that "people are not stingy, but their generosity is conditional", rather than by the unconditional altruism[9]. To justify their view, Gintis and Bowles report comprehensive empirical evidence. In American social surveys, for instance, it appears that people do not care that much about the cost of social schemes, but rather on the conditions setting which recipients should benefit from social security programs. According to Gilens (1999), the main question for taxpayers is not "who gets what" rather than "who deserves what".

Gintis and Bowles distinguish between a strong and a weak form of reciprocity: the former corresponds to "a propensity to cooperate and share with others similarly disposed, even at personal cost, and a willingness to punish those who violate cooperative and other social norms, even when punishing is personally costly". When confronted with the question "How much redistribution do you want" someone acting in accordance with strong reciprocity norms will be highly sensitive to the measures that benefits go along with (as, for instance, "looking intensively for a job" or "accepting job proposed by the work agency" or "contributing to tasks of social interest"). The weak reciprocity view is a milder version of the

[8] According to the standard median voter's model and the social insurance model, countries characterized by more unequal distributions of income should display higher support for redistributive policies, and thus larger coverage of welfare system. The reasons for such predictions are respectively given by the position of the median income (the skeweness of the income distribution) and by the fact that "if the welfare state insures against chance events that might relocate one's position in income distribution, and the impact of greater inequality is to enlarge the income distance one might be displaced as a result of these shocks, an individual with a given level of risk aversion will value insurance more in the more unequal economy" (Bowles and Gintis, 2000). Now, the empirical evidence about the actual correlation between the degree of inequality and the coverage of the welfare system is indeed of the opposite sign. For instance, more egalitarian countries display higher social security levels (e.g. Sweden) and more unequal countries are associated to lower levels of redistributions (e.g. United States).

[9] An unconditional altruist is defined as "an equally one-dimensional actor unconditionally willing to make personally costly contributions to others".

strong reciprocity view, for which both self-interested and altruistic concern matter. The weak reciprocity precisely states that the latter is conditional to the former. In other words, behaving altruistically is a mean to maximise individual's interest. For instance, «the future repayment» a generous/cooperative action will produce for the agent explains the self-interested form of cooperation. As an example of weak reciprocity, Gintis and Bowles take the model of redistribution-as-social-insurance, where it is in have-nots individuals' interest to accept a large social coverage, to the extent that they can reasonably expect to take a share of it. Reciprocity is somewhat seen as a voluntary contribution expected to be met by corresponding benefits[10].

Finally, note that a loose interpretation of the reciprocity view is expressed by the belief that people should be deemed 'deserving' in order to obtain public assistance. Thus this simple version of reciprocity may conflate with the general view that effort must be rewarded. If so, the reciprocity view would be another way of reading the observed negative correlation between the willingness to support redistribution and the beliefs that effort is rewarding[11].

2.6 Discriminating between social insurance, beliefs and views on justice.

Before entering into the empirical discussion, it is worthwhile to sum up the main assumptions of each model with respect to the key variables of demand for redistribution. The standard approach based on self-regarding preferences insists that the support to redistributive policies is only driven by considerations of private interest. The way personal interest is expressed vary if a static deterministic framework is used or if the demand for redistribution is formalised as a dynamic choice made under uncertainties. Moreover, beliefs about the determinants of achievements can also play the role of self-interest variables if they are correlated to the personal experience of individuals[12]. However, when such a correlation is

[10] One problem with this interpretation of weak reciprocity is that it is clearly too close to the standard model of homo economicus in what concerns predictions about the individual demand for redistribution. Thus it is difficult to discriminate empirically between these two models.

[11] In fact, if I strongly believe that all individuals have to provide an effort to deserve the State intervention, I will not support any social program that I know to be addressed to all those who, in my view, do not provide such an effort.

[12] It is assumed that in a complex economic environment, the key factors of achievement and failure are not known with certainty. At the same time, agents do not need to share the same beliefs about these determinants. This informational uncertainty may imply moral hazard behaviours but also may induce suspicion about their occurrence, and indeed this is enough to undermine the support given to redistribution. Thus, as the following example illustrates, it is essential that individuals experience failure through no fault of their own. Let assume that someone suspects that success only depends upon effort (on the basis of personal experience) but wonders whether some people are worst-off because they do not have the same belief and/or experience or just because they were not lucky enough. There is room for expecting moral hazard behaviour from the others to the extent that he thinks that they have "false" beliefs about what determines success and failure. However, when someone

not assumed, these beliefs can be interpreted more broadly as the individuals' views of social justice. The reciprocity approach is a specific variant of a social preferences model, for which tax-payers adhere to redistribution to the extent that they believe that the beneficiaries deserve to be helped and showed to be cooperative.

If these models make different assumptions about the underlying preferences for redistribution, none of them rules out the agents' anticipation of moral hazard behaviour with respect to the existing safety net represented by social protection. All models can predict that tax-payers might oppose the redistribution to protect themselves against moral hazard. This is the basic implication of standard self-interested models (like Sinn's one), but this is also what the social beliefs model (like Piketty's one) underlies[13]. Finally, the (strong) reciprocity view may also be interpreted along these lines, to the extent that counterparts are required for discouraging moral hazard by diminishing the disincentives of the safety net[14].

However, it must be noted that social preferences models typically assume that views of social justice and of norms of reciprocity affect redistribution beyond the moral hazard explanation as it might be the case, for instance, when people believing in self-determination oppose redistribution because they think that it is good for people to stand on their feet without the help of others, and not because they think that the safety net will induce moral hazard behavior.

More in general, beliefs about the determinants of achievement and failures do not have to coincide with norms about what one should do or should not do as welfare citizen – individuals can be deeply convinced of the fact that effort is not rewarding in real life (people do not succeed though they provide lots of efforts), but at the same time they might maintain that people have to behave according to a morality of responsibility.

There is a similar argument about a possible dissonance between self-determination beliefs, reciprocity standards and moral hazard suspicions. It could be that these three things are not related at all; for instance, when one is convinced that success is not only a question of personal determination and still thinks that counterparts are needed as (a) it increases the chances of social inclusion ; (b) it is just that people cooperate in a fair way[15]. The exchange

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experiences "failure", he might come to change his existing belief and thus his moral hazard suspicion could decrease as a consequence. Thus, when he updates his beliefs, he is led to recognize that social redistribution is needed as a result of more uncertainty on what explains individuals' outcomes. But this is another way of saying that social beliefs are, indeed, a proxi of social insurance (i.e. of self-interested demand for redistribution).

[13] See the previous footnote.

[14] We owe this remark to Claudia Senik.

[15]There is of course something linked to my personal interest in asking for people to play "fairly", but this personal interest should not be understood as "money", that is as a personal material advantage. This is about the fact of satisfying an ideal of justice.

idea could be seen of course as underpinning a wide array of different rationales: it could be seen as a form of paternalism ("I know what is good for them"), or as a way of promoting productive behaviours and fostering social inclusion mentality. This means conceiving redistribution as a way to provide incentives to join the well-off classes, to adopt preventive attitudes towards the future (so as to avoid self-stigmatisation or self-destructive and self-defeating behaviours). However, it is true that, a fortiori, counterparts can also be asked for discouraging moral hazard (i.e. diminishing the disincentives implied by the safety net).

Reciprocity can indeed endorse several reasons. In the original concept, there is only the idea that you behave as your peer behaves, even if this is personally costly for you. So, in fact everything depends on whether people perceive their peer as cooperative or not : if you are deemed cooperative, people will respond cooperatively. But if you are suspected to be non-cooperative, people will behave non-cooperatively with you. Indeed, reciprocity is a double-edged mechanism.

3. The Estimation of the demand for redistribution.

3.1 The data set and the method of estimation.

We use the 2000 DREES[16] Social Survey, "Opinions about the Welfare State", run on 4000 French households. Standard criteria of stratification with respect to the main socio-economic variables have been applied to make the sample representative of the whole population. Though the survey does not deal explicitly with the matter of redistribution from the rich to the poor, the data set contains a number of saliently related questions. Very often in social surveys the support to public redistribution is a latent variable, and thus it has to be approximated by an appropriate measure. Following Fong (2002), we build an indicator measuring the individual attitudes towards public intervention on the basis of some questions capturing the adherence of individual opinions to whether and how the State have to cope with reducing inequalities and implementing social policies for low-incomes classes[17].

[16] DREES (Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques, Ministère des Affaires Sociales, du Travail et de la Solidarité & Ministère de la Santé, de la Famille et des Personnes Handicapées).

[17] For that, we consider the three following questions:

1) Among the following institutions, which one do you think should stand by have-nots individuals?
   - Public Institutions (Central State or Local Authorities)
   - Individuals or Private Foundations/Associations
2) Among the following institutions, which one do you think should mostly battle with poverty?
   - Public Institutions (Central State or Local Authorities)
   - Individuals or Private Foundations/Associations

Moreover, we repeated our estimations by taking as the dependant variable a precisely stated issue of government intervention (i.e. without having recourse to a proxy), in order to corroborate the results of the previous approach and be able to conclude on the goodness of the proxy-indicator. Of course, even this last procedure does not allow drawing a definite conclusion on the reliability of opinion surveys as a tool for inferring individual demand for redistribution. But it can nonetheless shed a light on the consistency of such approach with respect to the inner structure of the survey.

For the first kind of estimation, we make use of a probit ordered model. The probit ordered model is a qualitative ordered-response model, which estimates the probability that an individual *i* falls in the category *k* :

$P(Y_i=n) = P(s_{n-1}<Y^*_i<s_n) = 1-F(s_{n-1}- \beta X_i)$

…….

$P(Y_i=2) = P(s_1<Y^*_i<s_2) = F(s_2- \beta X_i)-F(s_1- \beta X_i)$

$P(Y_i=1) = P(Y^*_i<s_1) = F(s_1- \beta X_i)$

Where the underlying response model is $Y_i^*= \beta X_i+u_i$, with X the vector of explanatory variables, $u_i \sim N(0,1)$ the residuals and F the distribution function.

In building the aggregate measure for redistribution we retain 3 questions, thus the dependent variable in the probit model has 4 (3+1) modalities. The support of redistribution increases with the agreement expressed by respondents towards the different items of government intervention[18]. So for instance, a level of redistribution equal to 3 means that the respondents hold the State responsible for providing assistance to have-nots individuals, for reducing poverty and exclusion, as well as for supporting dependant people.

For the estimation of specific measures of redistribution – such as the provision of minimum income (RMI) -- we also use the probit ordered model; the difference is that we only use one question as the dependent variable and that in this case the cutpoints are naturally identified

3) Among the following institutions, which one do you think should be made responsible for not self-dependent people?
   - Public Institutions (Central State or Local Authorities)
   - Individuals or Private Foundations/Associations

[18] See note 16 for a complete description of the three items.

with the three possible answers to these questions[19]. The natural order of answers already coincided with an increasing favorable attitude toward redistribution.

3.2 Three models of demand for redistribution.

We organise the empirical analysis of preferences for redistribution along the lines of existing literature. By doing so, we pursue the twofold objective of discussing our results with respect to those of previous studies, and of providing a new test of reciprocity norms within the same framework of analysis. We test three specifications of preferences for redistribution. The first model puts forward the self-interest rationales, while the two others rely on social norms explanations.

1/ The first model of redistribution, henceforth "Social Insurance model" is the following:

$$Y=\beta_1 X_1+ \beta_2 X_2 \qquad [1]$$

X_1 is the vector of socio-economic characteristics including: age, sex, educational attainment, living area (both as region and size of urban agglomeration); X_2 is the vector of self-interest variables including: income and exposure to risk (both as an objective fact and as self-perception- variables are described extensively later on).

In what concerns the self-interest explanation, income is the traditionally used variable (Fong, 2001; Corneo and Grüner, 2002) as a proxy of personal individual's well-being. Unlike these previous studies, however, our data set only contains overall household's incomes and thus we need to derive from the aggregate measure an individual one. To this aim, we use the equivalence scale transformation that worked as reference for introducing the minimum income schemes in France.[20]

We also specify three more variables to capture the social insurance effect: they are about the subjective perception of being among individuals who are mostly exposed to socio-economic risks, and the objective proximity to precariousness. Practically, for measuring the perceived

[19] The question on the RMI provision was asked in these terms: "Do you think that the RMI should 1) decrease; 2) remain stable; 3) increase. The question about the funding of the Welfare State read: "The current amount of resources invested in the Welfare System is equivalent to ¼ of the Yearly French GDP. Do you think that this amount should: 1) decrease; 2) remain stable; 3) increase."

[20] As usual, the equivalence scale transformation takes into account the size and the economies of scale within the household production. The coefficients are 1 for the first adult person, 1.5 for two adult people, 0.3 for the third and fourth additional household member and 0.4 for the fifth onwards. So, for instance, a household composed by two adults and two children has a coefficient of 2.1 while a family of three children is weighted 2.4.

fact of being exposed to risk and the actual proximity to precariousness we built three variables on the basis of available questions in the survey.

We define the subjective self-perception of exposure to risk as the belief held by an individual who thinks that certain categories of people are more likely to be the victim of poverty and exclusion. Since in the survey there is no direct measure for the subjective exposure to risk (such as "do you feel concerned by a risk specifically related to your age/ gender"), we create a crossed-dummy variable indicating if individuals who think that some categories of people are especially subject to a given risk belong at the same time to these categories. For instance, one of the risks we look at is the age related one. In the survey there is a question asking, "Do you think that x-years old people are mostly exposed to the risk of poverty and of exclusion?» At the same time since we control for the age of respondent, we can see if individuals answering "yes" are x-years old or not. If they are so, then they are considered as individuals who feel exposed-to-age risk. We apply this procedure to individuals whose job security is at risk and to those who declare to be concerned by the gender risk. We use a similar approach for the perception of poverty, matching the opinions about what poverty is and the objective fact of corresponding to such a description.[21]

The proximity to precariousness is measured as how much one is acquainted[22] with individuals living under risky conditions (such as being a long-term unemployed, having a precarious job or meeting other criteria of serious social assistance.)

It goes without saying that for all variables measuring the exposure to risk, the expected sign of the coefficient is to be positive, that is if the social-insurance motive is relevant, individuals

[21] For exposure to risk due to age, we consider the following question: "Would you say that risk of poverty and of exclusion mostly concerns: - people between 18 and 24 years old; -people between 25 and 34 years old; people between 35 and 49 years old; - people between 50 and 64 years old; - people over 60; - nobody in particular." We crossed the answer to this question with the actual age of the respondent. We thus define individuals who feel being exposed to the age-risk as individuals believing that people of their own age are a category at risk. A similar definition is given for risk related to poverty and risk related to gender. The questions we used for creating such variables were respectively: "Would you say that risk of poverty mainly concerns: - women; -men; none of them in particular" and "Would you say that today being poor or marginalized means: - Being a long-term unemployed; - Being homeless – Mean-Tested minimum income recipients; - Being worry about bills; - Cannot afford medical treatments; - Growing up children as single-parent; - Getting an invalidity pension; - Having a precarious professional status; - Working part-time with a low salary".

[22] Practically we measure the proximity to precariousness by the mean of this multi-level question: "Do you know in your family circle – or around you- some people belonging to any of the following categories: - Unemployed without any insurance benefit; - Homeless; -Single-parent family with children and earning a low salary; - Seriously handicapped person". Respondents could answer this question by indicating if they knew someone either in their family, outside the family or if they were themselves in one of these situations. We thus considered as people close to precariousness those respondents who answered yes to at least one of the questions. Even if in principle it would have been better to differentiate between several degrees of proximity, in practice no such distinction would turn out to be relevant. The reason is that, contrary to what one might expect, most of respondents stated to have a very limited experience of precariousness.

belonging to classes that are (objectively or subjectively) more exposed to risk should demand more redistribution.

Finally, we control for other subjective feelings about past and future evolutions of inequalities in the French society[23]. We consider this variable as a sort of personal apprehension towards the conditions of the most needy individuals in the society. According to this interpretation, we expect to find a positive correlation between this variable and the demand for redistribution. However a positive correlation would be consistent as well with a social insurance effect to the extent that views about trends of inequality and poverty express a personal concern for one's own situation. We postpone the extensive discussion of this variable to later sections, when its interpretation will naturally arise from the results of estimations.

2/ The second model of redistribution focuses on the opinions about the causes of poverty:

$$Y=\beta_1 X_1+\beta_2 X_2+\beta_3 X_3$$

where X_3 is a vector of beliefs and social norms including: belief that the main cause of the poverty is the lack of effort (henceforth called self-determination beliefs), belief that poverty is mainly caused by bad exogenous circumstances[24] (called exogenous determination beliefs).

3/ The second model of social preferences is based on the reciprocity norms. For that, we specified a model where the vector of social beliefs (X^*_3) contains an additional variable: the variable expressing the requirement of a counterpart to recipients of public help.

$$Y=\beta_1 X_1+\beta_2 X_2+\beta^*_3 X^*_3$$

To provide a test of reciprocity, we should control for the respondents' expectation on the recipients' intentions of reciprocating public help. As the social survey does not include any question about expectations on recipients' intentions, we focused on the agreement expressed over the existence of workfare measures. For instance we consider questions like: "Do you think that RMI- Minimum Income for Social Integration- recipients should actively look for a

[23] The questions used were the following: "Do you think that, in the last five years, inequalities in France have: a) increased, b) decreased, c) remained stable" and "Do you think that, in the future, inequalities in France will a) increase, b) decrease, c) remain stable".

[24] The questions reads: "Among the following reasons, you may find some that explain why some people are poor or suffer from social exclusion: -They do not want to work; -They have not been lucky; - They have not beneficiated of any help from their family (…)" Respondents had to express their agreement on these statements.

job?[25]". For testing whether reciprocity norms explain the attitudes towards redistribution, we proceeded as follows. As a measure of the reciprocity norm we used a crossed variable between the opinions on the deemed causes of poverty and the demand for counterparts to redistribution. We test two different specifications of the reciprocity model: one where reciprocity is given by the interaction between the self-determination variable and the counterparts to benefits, and another where reciprocity is obtained as the joint variation of exogenous determination and counterparts.

3.3 Results.

We present the results of estimations by first looking at each model separately and then by considering the most general specification, which includes all the variables that might be relevant for understanding the support to the redistribution. Thus we start by the discussion of the model of social insurance (Table 1) and the model of social beliefs (Table 2) and we then continue with the saturated model, which contains both self-interest and social beliefs variables (Table 3). We end by presenting the model of reciprocity, for which we test two different specifications (Tables 4 and 5). This section presents the results of regressions ran on the full sample (consisting of 2285 observations). The next section turns to the estimations made on sub-samples of income classes. As explained above, it might be that self-interest variables are correlated to social beliefs; before proceeding to the second section, we will present some tests of goodness of fit that can also be interpreted as tests of conditional independence of sub-groups of coefficients and aims to assess whether social beliefs affect the support for redistribution, irrespective of individuals' personal interest.

Note that the probit procedure estimates the probability that the dependant variable has the lowest value, this means that all the signs reported in the regression tables have to be read as expressing the impact of the variables on the willingness to 'oppose' redistribution or, stated differently, to agree the least with redistribution.

A general finding (i.e. irrespective of the model tested) is that the following categories of people are less supportive of redistribution: women, inhabitants of all small and medium size towns and people living in the Mediterranean area. Respondents less than 35 years old are less

[25] The questions we used were: (1) Do you think that unemployed people should be entitled to benefits conditional to some counterparts –as actively looking for a job or a training-? (2) Do you think that unemployment benefits should have a limited duration, irrespective of finding a new job? (3) When RMI recipients are able to work, do you think that in return of allowances they should be asked – To accept the jobs that the employment agency finds for them; - To accept to go through a training period; - To participate at social utility activities; - To make efforts for succeeding social integration; - To look for a job.

supportive of redistribution. The latter fact can be explained by the fact that the current public redistribution of wealth among generations is highly in favour of older generations (the ratio of expenditures for young and elderly is about one to three). However, this was not obvious from the dynamic point of view of intergenerational redistribution and considering the fact that younger generations expect to be more exposed to negative shocks than older generations do. Had individual attitudes toward redistribution been forward-looking and self-interested, younger generations should have demanded more redistribution as they feel more exposed to the socio-economic risks.

In what more specifically concerns the social insurance model[26], the most important result is that the coefficients of income classes never significantly differ from zero. Note also, that for the lowest income classes, the attitude towards redistribution is not of the expected sign. Individuals of the highest incomes classes (that is people with an income greater than 1905 €) are, as predicted by the social insurance motive, less supportive of redistribution. In particular, the coefficient of the class between 1950 € and 2439 € is significantly different from zero. The other variables measuring the self-interest motive, such as the subjective feeling of being exposed to the risk of economic precariousness as well as the gender and the age risk, do not significantly explain the demand for redistribution. Moreover, they do not have the expected sign: individuals who do not feel to be exposed to risk are, indeed, more favourable to the redistribution. By contrast, proximity to precariousness is associated to more redistribution, though the corresponding coefficient is not significantly different from zero. Finally, the variable measuring the perception of past and future evolutions of inequalities explains the support to redistribution in the expected direction. In fact, those who reckon that inequalities have decreased and will continue to decrease are less in favour of public intervention than those who have the opposite view[27].

[26] In this specification of the Social Insurance Model we dropped the subjective perception of being exposed at risk of poverty and we only considered the objective fact of belonging to a category at risk. When we used the broader specification, we substantially had the same results.

[27] As explained above, the positive correlation between anticipating a degradation of worst-off individuals' conditions and the demand for redistribution might hide both a social insurance effect and an altruistic concern towards others. To discriminate between the two explanations, opinions about the trends of inequalities are to be observed jointly with one's own objective situation. We created a crossed-dummy variable between the perception of inequalities and the personal situation of the respondent (i.e. objectively among worst-off individuals), but we could not find any relevant evidence from it. Though from the inspection of tables 1-3, the sign of the coefficient (of the variable deterioration of have-nots individuals' conditions) seems to indicate that respondents care about needy individuals, the definite interpretation will be done after the estimations made by incomes classes (see section 3.5).

As concerns the impact of norms and social beliefs on the adhesion given to the redistributive politics (see table 2), both coefficients of norms have the expected sign. Thus, those who believe that poverty is mainly caused by the lack of individual effort are less supportive of redistribution; on the other hand, those who consider that poverty is caused by bad luck are more in favour of redistribution[28]. However the result is statistically significant only for the belief that poverty is caused by lack of effort.

With respect to the previous simple social beliefs model, the reciprocity view provides additional insights into the rationales underlying the support given to the redistribution.

We considered four categories of respondents with respect to the reciprocity norm: those who believe in self-determination and do not want counterparts (group 1); those who believe in self-determination and want some counterparts to redistribution (group 2). Those who do not believe in self-determination and want counterparts to redistribution (group 3). Finally those who do not believe in self- determination and do not want counterparts (group 4).

Table 4 shows that the most supportive group is the latter (group 4) while the least supportive is group 1. The second most supportive is group 3 and the second least supportive is group 2. This means two things: first that the self-determination has a non-ambiguous effect on the demand for redistribution (as we previously observed, those who hold worst-off responsible for their condition, want less redistribution); secondly, the counterpart has an ambiguous impact on the support given to redistributive policies.

These findings show that the support for redistribution can be explained through the respondents' views of justice, and that different norms of justice correspond to different levels of demand for redistribution. The population of respondents turns out to be divided in three typologies of respondents (see Graph. 1): the 'individualists', the *homo reciprocans* (those who are ready to cooperate with similarly disposed individuals but that are ready to not cooperate if they detect the peer's not cooperative action) and the unconditional altruists. The unconditional altruists are the most in favour of redistribution. To the other side of the social spectrum, there are those individuals who are unconditionally against redistribution (and thus, for the very same reason, do not expect or ask for any counterpart). In the middle, we find a large share of population represented by *homo reciprocans*, which, by definition, expect or ask for something. By giving a moderate support to redistribution, *Homo reciprocans* reveals

[28] We also tested a more extensive definition of exogenous determination variables, using the belief that poverty is caused by the lack of family support. However, the coefficient of this variable was not significantly different from zero. Moreover, the coefficient had the inverted sign: people believing either in bad luck or in lack of family support as causes of poverty were found to be less supportive of redistribution.

himself as thinking that redistribution has to be a question of fair division of advantages or burdens, in other words that its costs should not be incurred by a minority of people only.

Moreover, consistently with the reciprocity view, two kinds of *homo reciprocans* emerge in the population, depending on how they perceive beneficiaries' behaviour and, more in particular, on whether they think that recipients are personally responsible for being worst-off. It has to be reminded that the reciprocity model predicts that individuals act non-cooperatively when they think that the other's behaviour is not cooperative enough, while it predicts a cooperative action whenever the peer's action is taken as cooperative.

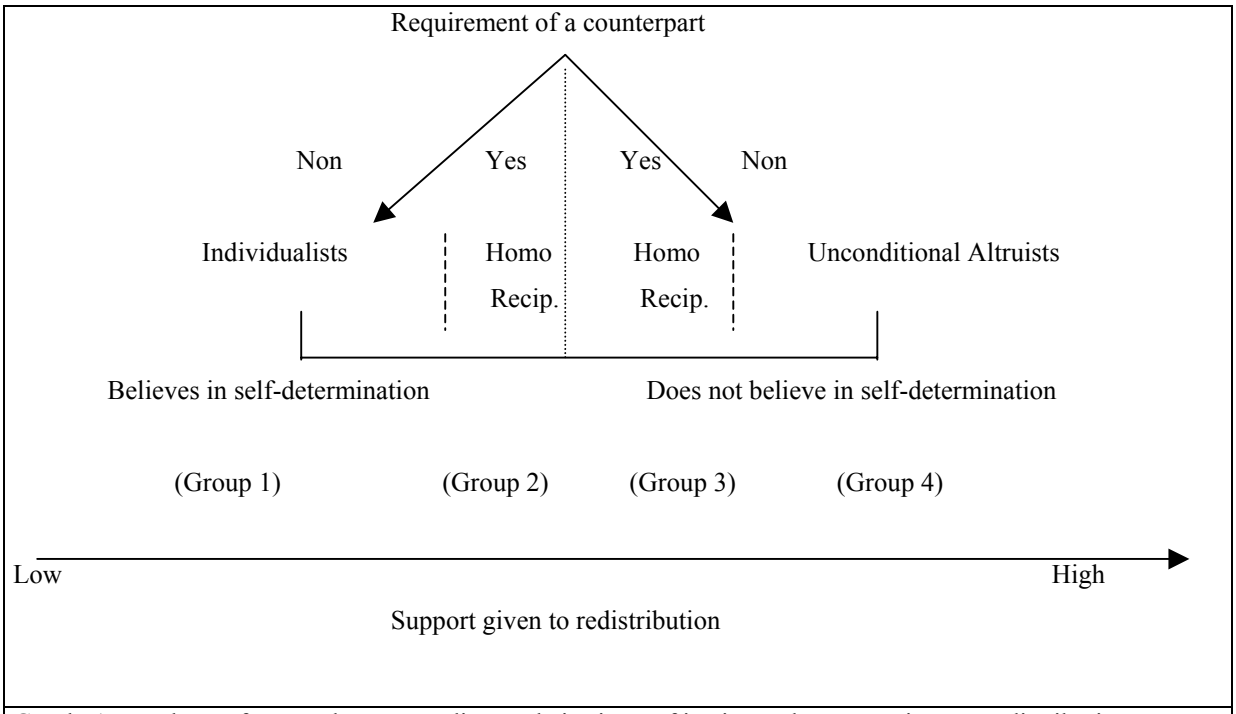
A *homo reciprocans* belonging to group 2 is performing a "negative form" of reciprocity: he thinks that the poors are responsible for their bad condition, in other words he suspects the others of not providing all the efforts they could provide (suspicion of "non-cooperative" behaviour). By contrast, a *homo reciprocans* belonging to group 3, holds the opposite belief: he does not hold the poors responsible. *Homo reciprocans* from group 3 thinks that the worst-off have done their best to not find themselves in such a position. The different view about recipients' responsibility explain why *homo reciprocans* from group 3 wants more redistribution than *homo reciprocans* from group 2: the former is playing positive reciprocity, the latter is acting according to negative reciprocity.

This fact also allows explaining how the counterparts are actually perceived by the three groups of individuals. The unconditional altruist consider that asking for counterparts will mean penalising further unlucky individuals (more precisely, individuals who are not responsible for being worst-off). The *homo reciprocans* from group 3 are likely to intend the counterpart as a form of inclusive measure, increasing chances of joining the group of well-off individuals (giving them a chance of being like all the others). This probably also reflect the idea that, even if public help is required, welfare recipients have more chances of escaping poverty and social exclusion through employment or by performing social utility activities. The *homo reciprocans* from group 2 are more likely to see in the counterpart a form of self-insurance against moral hazard behaviours from beneficiaries. This fact is in fact in line with the stigmatisation view (Besley and Coate, 1992), which suggests that taxpayers –citizens more generally- do not sustain public welfare system, as beneficiaries are deemed undeserving. However, when counterparts are required, and the welfare system is thus replaced by a workfare system, the stigmatisation decreases as counterparts allow discriminating between those who deserve public help and those who do not deserve it. This explains for instance why group 2 is more supportive than group 1.

At the same time, the social stigma explanation is consistent with the fact that counterparts enhance support for redistribution only among those who think that people are poor as they do not provide sufficient effort. The other group does not stigmatise welfare recipients and thus the counterparts do not affect significantly their willingness to redistribute.

In the second specification of reciprocity (table 5), the relation between an exogenous determination norm and reciprocity is explored. Here those who believe in the exogenous determination and do not expect any counterpart from public measures represent the most supportive category of respondents. As in the previous model, *homo reciprocans* want less redistribution than unconditional altruists. However, the demand for counterparts is always associated to lower redistribution (though the result is not statistically significant). Even if more evidence is needed on this point, we think that it could be due to the fuzziness of the exogenous belief variable, which may be underlying different and contradictory views. The formulation of the questions might be simply too generic for tracking groups of individuals according to their view of justice[29].

[29] It is very likely that people understand this question in different ways, depending on how "bad luck" is taken for. For some the bad luck as the cause of poverty might be intended as the fact of living in a modest family back-ground, or being of a given race or being born females instead of males, and due to one or more of these facts, being "condemned" to indigent conditions for the rest of your life. For others, bad luck might stand for a negative choc (as the death of the spouse or unexpected unemployment). Again, if it is intended so, then it might be taken as a key-determinant of poverty. But if respondents see in the word "bad luck" a minor episode, it is likely that they answer 'no' to this question just because they have not figured out the potentially catastrophic contours of bad luck, but not because that they do not think that family circumstances, or other heavy initial contingencies may affect the probability of being poor.



Graph. 1 Typology of respondents according to their views of justice and support given to redistribution.

Table 1 : SOCIAL INSURANCE MODEL [30]								
	Full sample	2285 obs.	Class 1	363 obs.	Class 2	552 obs.	Class 6	156 obs.
Parameter	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
Intercept	-1,9361***	0,3485	-1,313*	0,802	-2,3196***	0,7145	-0,11	0,7106
Intercept2	-0,4443***	0,3458	0,2087	0,7976	-1,0197	0,7084	1,8071***	0,7272
Intercept3	1,1531***	0,3474	1,7581**	0,8052	0,5926	0,711	3,4889***	0,7642
<2000 inhab	0,7976***	0,2918	0,5271	0,692	1,3206**	0,6132	0,2859	0,6574
2000 to 20000 inhab	0,7446***	0,2809	0,9746	0,6659	1,3142**	0,5935	0,2472	0,7173
20000 to 100000 inhab	0,5593**	0,2942	0,4866	0,7055	0,8499	0,619	0,9267	0,8204
>100000 inhab	0,6235**	0,2898	0,6513	0,7034	1,1218*	0,617	0,3607	0,5786
Ile de France	0,4589*	0,2846	0,5802	0,6703	1,1218*	0,5968	0	
North	-0,1478	0,1907	-0,259	0,4777	-0,2375	0,3839	0,6829	0,7014
East	-0,5118***	0,1987	-0,8596*	0,5045	-0,746**	0,3906	0,1499	1,0639
BPE	-0,4921***	0,1671	-0,3887	0,4532	-0,4266	0,3383	-0,4223	0,729
BPW	-0,3557**	0,1661	-0,3431	0,4057	-0,5464	0,3677	0,0838	0,7831
West	-0,1521	0,1505	-0,2013	0,3647	0,0218	0,3099	-0,4603	0,7365
South West	-0,29**	0,1524	-0,3602	0,3901	-0,2815	0,308	-0,2226	0,6821
South East	-0,5759***	0,1708	-0,6543	0,418	-0,8301***	0,3545	-0,5988	0,7411
Postgraduates	-0,00813	0,1432	-0,4052	0,5491	-0,1108	0,3481	-0,3792	0,4726
Graduates	-0,0182	0,1406	-0,8596**	0,4505	-0,3104	0,2946	-0,3783	0,5254

[30] Note first that probit procedure estimate the probability that the dependant variable has the lowest value, this means that all the signs reported in the regression tables have to be inverted. Second, where not indicated, the reference variable is relative to the self-interested category of respondents. For each dependant and independent variable, we drop all the "don't know" observations; we believe that this is a necessary step for obtaining a consistent measure of demand for redistribution.

Undergraduates	-0,1492	0,1253	-0,1173	0,3275	-0,0586	0,2446	-0,3221	0,5113
High School	-0,146	0,1124	-0,4598*	0,2667	-0,4485**	0,2254	-0,3377	0,5515
Primary I	-0,0972	0,1332	-0,3302	0,2863	0,016	0,2785	-0,8074	0,8837
Primary II	-0,1763	0,3308	-0,7717	0,9533	-0,075	0,5111	-1,4816	2,0617
533 €<Income<762 €	-0,023	0,1345						
762 €<Income<990 €	0,1445	0,1238						
990 €<Income<1143 €	-0,0448	0,1455						
1143 €<Income<1448 €	-0,0744	0,1453						
1448 €<Income< 1905 €	-0,0928	0,1777						
1905 €<Income< 2439 €	0,3029*	0,1826						
>2439 €	0,2872	0,2464						
Women	0,1951***	0,0777	0,373*	0,206	0,3617**	0,1624	0,128	0,3354
<35 years old	0,1332	0,0864	-0,0602	0,2144	0,0637	0,1729	0,5209	0,4478
Not subjectively concerned by the poverty risk due to the age	-0,0315	0,1108	-0,1001	0,2555	0,3765*	0,2345	-1,0505**	0,502
Not subjectively concerned by the poverty risk due to the gender	-0,0671	0,1025	-0,5393**	0,2645	-0,418**	0,22	-0,1864	0,4942
Think that inequality decreased in the past and keep decreasing in the future	0,2388***	0,1013	0,7701***	0,2789	0,4004*	0,2246	0,0212	0,4138
'Far' from precariousness	0,0541	0,0812	-0,1699	0,2117	0,2555	0,163	-0,6213**	0,3264
Note : For the size of living area the reference is Paris, for the regions the reference is the Mediterranean area; for the Educational Attainment the reference is the lowest degree. For the age, the reference is people over 35 years old, for the Income Classes the reference is Class of <533 €. For exposure to risk variables the reference is people feeling concerned by the risk of poverty. Where not specified, the reference is the opposite opinion on the given issue.								

Table 2 : SOCIAL BELIEFS MODEL [31]

	Full sample	2285 obs.	Class 1	363 obs.	Class 2	552 obs.	Class 6	156 obs.
Parameter	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
Intercept	-2,0025***	0,3378	-1,7179**	0,7661	-2,008***	0,6797	-1,2229**	0,5516
Intercept2	-0,5096	0,3349	-0,2095	0,7594	-0,7261	0,6743	0,6342	0,5436
Intercept3	1,091***	0,3364	1,3199*	0,7649	0,872	0,6783	2,2673***	0,578
<2000 inhab	0,7706***	0,2912	0,3847	0,6848	1,1582**	0,6062	-0,0269	0,6641
2000 to 20000 inhab	0,7013***	0,2804	0,8435	0,6611	1,1408**	0,5866	0,0245	0,7127
20000 to 100000 inhab	0,5064*	0,2937	0,3689	0,6935	0,6494	0,6127	0,5282	0,8033
>100000 inhab	0,5951**	0,2894	0,5864	0,6975	0,9574	0,6097	0,2829	0,5731
Ile de France	0,4478	0,2843	0,6403	0,662	1,0682*	0,5921	0	
North	-0,1848	0,1897	-0,2894	0,4743	-0,1754	0,3828	0,4385	0,6981
East	-0,5187***	0,1971	-0,9828**	0,4992	-0,6306*	0,3863	-0,00162	1,0547
BPE	-0,4745***	0,1669	-0,3315	0,4518	-0,3843	0,3368	-0,3753	0,7287
BPW	-0,3294**	0,165	-0,2266	0,4019	-0,4937	0,3647	-0,2042	0,7634
West	-0,1515	0,15	-0,1769	0,3673	0,129	0,3093	-0,42	0,7487
South West	-0,2944**	0,1518	-0,3538	0,3883	-0,2592	0,3063	-0,3205	0,6747
South East	-0,5702***	0,1705	-0,6366	0,4131	-0,7669**	0,3532	-0,5806	0,7196
Postgraduates	0,0434	0,1431	-0,393	0,5424	-0,0703	0,3489	-0,5507	0,4626
Graduates	0,00444	0,1405	-0,7275*	0,4479	-0,2677	0,2934	-0,3716	0,522

[31] In this specification of the Social Insurance Model we dropped the subjective perception of being exposed to the risk of poverty and we only considered the variable RISKPOV, which captures the objective fact of belonging to a category at risk. With the other estimation, we roughly had the same results.

Undergraduates	-0,1394	0,1251	-0,0939	0,3257	0,00611	0,2424	-0,4073	0,5046
High School	-0,1578	0,1122	-0,4817*	0,2692	-0,3647*	0,2238	-0,4946	0,544
Primary I	-0,0962	0,1334	-0,4468	0,2879	0,1621	0,2768	-1,0924	0,883
Primary II	-0,171	0,3308	-0,9742	0,9492	0,0274	0,5074	-1,0475	1,9692
533 €<Income<762 €	-0,0212	0,1343						
762 €<Income<990 €	0,1351	0,123						
990 €<Income<1143 €	-0,044	0,1449						
1143 €<Income<1448 €	-0,0693	0,1444						
1448 €<Income< 1905 €	-0,0799	0,1772						
1905 €<Income< 2439 €	0,2953*	0,1814						
>2439 €	0,2741	0,2456						
Women	0,1812***	0,0769	0,3027	0,2014	0,3051**	0,1595	-0,0265	0,3219
<35 years old	0,1346	0,0862	-0,0328	0,2133	0,033	0,1717	0,5877	0,4454
Thinks that poverty is caused by lack of effort	0,2462***	0,0769	0,4635**	0,198	0,0202	0,1602	-0,0403	0,3125
Thinks that poverty is caused by bad luck	-0,0678	0,079	-0,2068	0,2006	-0,1321	0,16	0,2739	0,3154

Note : References for the socio-economic variables are the same of the Social Insurance Model. For exogenous and self-determination causes of poverty, the reference is given by people holding the opposite view.

Table 3: SOCIAL INSURANCE + SOCIAL BELIEFS MODEL [32]

	Full sample	2285 obs.	Class 1	363 obs.	Class 2	552 obs.	Class 6	156 obs.
Parameter	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
Intercept	-2,0055***	0,3542	-1,3447*	0,8122	-2,2834***	0,7273	-0,1743	0,7337
Intercept2	-0,5093	0,3515	0,1915	0,8078	-0,9835	0,7215	1,7568***	0,7489
Intercept3	1,0937***	0,3529	1,7575**	0,8152	0,6294	0,7241	3,4555***	0,7834
<2000 inhab	0,8158***	0,292	0,5059	0,6926	1,3131**	0,6131	0,1754	0,6764
2000 to 20000 inhab	0,7426***	0,2811	0,9522	0,6676	1,3037**	0,5935	0,1546	0,7258
20000 to 100000 inhab	0,5552**	0,2944	0,4532	0,704	0,8419	0,6192	0,8311	0,829
>100000 inhab	0,6359**	0,2901	0,6444	0,703	1,1201*	0,6168	0,2774	0,591
Ile de France	0,4641*	0,2847	0,5511	0,669	1,1295**	0,5963	0	0
North	-0,1804	0,1911	-0,2961	0,4784	-0,2455	0,3842	0,9681	0,7376
East	-0,5271***	0,1988	-0,9206*	0,5063	-0,7373**	0,3912	0,3534	1,0752
BPE	-0,4876***	0,1672	-0,4287	0,4548	-0,4038	0,3396	-0,2925	0,7382
BPW	-0,3493**	0,1661	-0,3522	0,4069	-0,5246	0,3682	0,1222	0,7874
West	-0,1677	0,1508	-0,2663	0,3693	0,0419	0,3111	-0,2968	0,754
South West	-0,3042**	0,1525	-0,4026	0,3923	-0,2793	0,3082	-0,0847	0,6942
South East	-0,5776***	0,1709	-0,67*	0,4186	-0,8217**	0,3548	-0,5876	0,743
Postgraduates	0,0218	0,1438	-0,5324	0,5507	-0,1151	0,3503	-0,3042	0,4756
Graduates	-0,00927	0,1407	-0,8713**	0,4516	-0,3176	0,2949	-0,3726	0,5266
Undergraduates	-0,1463	0,1254	-0,1411	0,328	-0,0615	0,2446	-0,283	0,5125

[32] In this specification of the Social Insurance Model we dropped the subjective perception of being exposed to the risk of poverty and we only considered the variable expressing the objective fact of belonging to a category at risk. When using the variable measuring the subjective risk of poverty we roughly had the same results.

High School	-0,1628	0,1125	-0,5308**	0,2714	-0,457**	0,2268	-0,3822	0,5547
Primary I	-0,1027	0,1336	-0,3733	0,2902	0,0234	0,2803	-0,8015	0,8935
Primary II	-0,1802	0,331	-0,855	0,9559	-0,0804	0,5115	-1,3395	2,0801
533 €<Income<762 €	-0,027	0,1346						
762 €<Income<990 €	0,1367	0,1239						
990 €<Income<1143 €	-0,0561	0,1457						
1143 €<Income<1448 €	-0,08	0,1453						
1448 €<Income< 1905 €	-0,0935	0,1778						
1905 €<Income< 2439 €	0,2914	0,1827						
>2439 €	0,2667	0,2466						
Women	0,2021***	0,0777	0,3997**	0,2066	0,3683**	0,1628	0,0961	0,3368
<35 years old	0,1322	0,0864	-0,0526	0,215	0,059	0,1733	0,577	0,4496
Not subjectively concerned by the poverty risk due to the age	-0,0331	0,1109	-0,0927	0,2559	0,3793*	0,2348	-1,1779***	0,5144
Not subjectively concerned by the poverty risk due to the gender	-0,0639	0,1026	-0,5395**	0,2651	-0,4131*	0,2202	-0,3032	0,5097
Think that inequality decreased in the past and keep decreasing in the future	0,2217**	0,1014	0,677**	0,2802	0,4021*	0,2246	0,0291	0,4205
'Far' from precariousness	0,0491	0,0813	-0,1607	0,2122	0,2467	0,1635	-0,6118*	0,3309
Thinks that poverty is caused by lack of effort	0,236***	0,077	0,4143**	0,2	0,0384	0,1607	-0,0396	0,325
Thinks that poverty is caused by bad luck	-0,0667	0,0791	-0,169	0,2015	-0,1031	0,1609	0,4312	0,3312

Table 4 SOCIAL INSURANCE + RECIPROCITY NORMS								
	Full sample	2285 obs.	Class 1	363 obs.	Class 2	552 obs.	Class 6	156 obs.
Parameter	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
Intercept	-2,3678***	0,3698	-1,5979**	0,8555	-2,6358***	0,7645	-0,3429	0,9755
Intercept2	-0,8696***	0,3666	-0,0547	0,8502	-1,3357*	0,758	1,5898*	0,9857
Intercept3	0,7376**	0,3672	1,5155**	0,8559	0,2793	0,7592	3,3034**	1,0113
<2000 inhab	0,8340***	0,2921	0,5833	0,6938	1,3572**	0,6154	0,1736	0,6745
2000 to 20000 inhab	0,7487***	0,2811	1,0408	0,6675	1,3405**	0,5969	0,0747	0,7266
20000 to 100000 inhab	0,5540**	0,2944	0,5293	0,7055	0,8838	0,6212	0,833	0,8223
>100000 inhab	0,6454**	0,2902	0,6773	0,7036	1,165**	0,6193	0,3097	0,586
Ile de France	0,4647*	0,2849	0,5471	0,6695	1,1709**	0,6	0	0
North	-0,1937	0,1909	-0,4363	0,4849	-0,2603	0,3841	0,7225	0,7071
East	-0,5383***	0,1990	-0,9155*	0,5113	-0,7223*	0,3911	0,322	1,0867
BPE	-0,5157***	0,1674	-0,478	0,4583	-0,4347	0,3395	-0,4094	0,7344
BPW	-0,3745**	0,1663	-0,3761	0,4093	-0,5542	0,3683	0,2703	0,7947
West	-0,1857	0,1508	-0,3574	0,3714	0,0395	0,3102	-0,3185	0,7464
South West	-0,3116**	0,1526	-0,4118	0,3929	-0,2845	0,3083	-0,1603	0,6871
South East	-0,5916***	0,1710	-0,6704	0,4189	-0,8171**	0,3548	-0,5569	0,7442
Postgraduates	0,0307	0,1436	-0,5355	0,5524	-0,0611	0,3506	-0,3484	0,4744
Graduates	-0,0113	0,1407	-0,824*	0,4525	-0,3082	0,2953	-0,4218	0,5275
Undergraduates	-0,1305	0,1254	-0,1235	0,329	-0,0538	0,2447	-0,3607	0,516
High School	-0,1647	0,1126	-0,5405**	0,2706	-0,4427**	0,227	-0,3184	0,5538
Primary I	-0,1018	0,1335	-0,3475	0,2903	0,0302	0,28	-0,718	0,8987

Primary II	-0,1572	0,3314	-0,8186	0,9598	-0,0784	0,5118	-1,4785	2,0803
533 €<Income<762 €	-0,0349	0,1347						
762 €<Income<990 €	0,1199	0,1241						
990 €<Income<1143 €	-0,0812	0,1459						
1143 €<Income<1448 €	-0,1076	0,1456						
1448 €<Income< 1905 €	-0,1005	0,1779						
1905 €<Income< 2439 €	0,2642	0,1831						
>2439 €	0,2252	0,2469						
Women	0,1954***	0,0778	0,4135**	0,2072	0,3692**	0,1629	0,1594	0,3368
<35 years old	0,1319	0,0865	-0,0796	0,2153	0,066	0,1735	0,4961	0,4481
Not subjectively concerned by the poverty risk due to the age	-0,0432	0,1109	-0,1195	0,2566	0,3844*	0,2356	-1,0354**	0,5099
Not subjectively concerned by the poverty risk due to the gender	-0,0589	0,1026	-0,5461**	0,2651	-0,4122*	0,2204	-0,1985	0,497
Think that inequality decreased in the past and keep decreasing in the future	0,2226**	0,1015	0,7527***	0,2833	0,4075*	0,225	-0,0342	0,4233
'Far' from precariousness	0,0554	0,0814	-0,1693	0,2127	0,2425	0,1633	-0,6864**	0,3352
Thinks that poverty is caused by lack of effort & does not want counterparts to redistribution	0,5923***	0,2172	1,2983**	0,6009	0,0115	0,4271	-0,9833	1,1222
Thinks that poverty is caused by lack of effort & wants counterparts to redistribution	0,5766***	0,1439	0,4894	0,3428	0,317	0,3024	0,3249	0,7776
Does not think that poverty is caused by lack of effort & wants counterparts to redistribution	0,3993***	0,1424	0,1458	0,3387	0,2729	0,2991	0,3382	0,7701

Note : For the Crossed dummy variable between self-determination and counterpart, the reference is given by people who do not think that poverty is mainly caused by lack of effort and do not agree with the fact that redistribution should be met by some counterpart. Other reference variables remain unchanged.

Table 5 SOCIAL INSURANCE + RECIPROCITY NORMS

	Full sample	2285 obs.	Class 1	363 obs.	Class 2	552 obs.	Class 6	156 obs.
Parameter	Estimate	Error	Estimate	Error	Estimate	Error	Estimate	Error
Intercept	-2,2455***	0,3703	-1,4809*	0,8576	-2,7337***	0,7562	-0,9179	0,9301
Intercept2	-0,7518**	0,3673	0,0464	0,8528	-1,433**	0,7494	1,0566	0,9347
Intercept3	0,8491**	0,3682	1,6**	0,8592	0,1854	0,7501	2,8109***	0,955
<2000 inhab	0,8022***	0,2919	0,4782	0,6954	1,3073**	0,6137	0,1542	0,6684
2000 to 20000 inhab	0,7338***	0,281	0,9176	0,6707	1,3069**	0,5932	0,067	0,7343
20000 to 100000 inhab	0,5409*	0,2943	0,4454	0,7079	0,8292	0,6196	0,8841	0,837
>100000 inhab	0,6234**	0,29	0,6263	0,7058	1,1242**	0,6172	0,2913	0,591
Ile de France	0,4597*	0,2847	0,5844	0,6719	1,1142**	0,5984	0	0
North	-0,1753	0,191	-0,2402	0,4779	-0,2678	0,3844	0,9782	0,7398
East	-0,5157***	0,1988	-0,8462*	0,51	-0,705*	0,392	0,4987	1,0917
BPE	-0,504***	0,1673	-0,3552	0,456	-0,4258	0,3392	-0,353	0,7385
BPW	-0,3626**	0,1662	-0,2992	0,4091	-0,5503	0,3683	0,2768	0,7946
West	-0,1404	0,1508	-0,1436	0,3677	0,0635	0,3113	-0,1887	0,7581
South West	-0,2927**	0,1525	-0,3246	0,3932	-0,2782	0,3083	-0,1773	0,7004

South East	-0,587***	0,1709	-0,6476	0,4189	-0,8282**	0,3552	-0,7042	0,7472
Postgraduates	-0,00308	0,1434	-0,4249	0,5505	-0,0502	0,351	-0,348	0,4801
Graduates	-0,03	0,1407	-0,865**	0,4515	-0,3258	0,295	-0,4476	0,5292
Undergraduates	-0,148	0,1255	-0,1102	0,3283	-0,058	0,2446	-0,4086	0,5184
High School	-0,1496	0,1125	-0,4565*	0,2701	-0,4391**	0,2258	-0,437	0,5572
Primary I	-0,0755	0,1336	-0,3042	0,2896	0,058	0,2793	-0,7436	0,8902
Primary II	-0,1791	0,3311	-0,8119	0,958	-0,0874	0,5112	-1,3058	2,0731
533 €<Income<762 €	-0,0329	0,1346						
762 €<Income<990 €	0,1383	0,124						
990 €<Income<1143 €	-0,0513	0,1458						
1143 €<Income<1448 €	-0,0916	0,1455						
1448 €<Income< 1905 €	-0,1005	0,1778						
1905 €<Income< 2439 €	0,2834	0,1829						
>2439 €	0,2614	0,2468						
Women	0,1968***	0,0777	0,3773*	0,2071	0,3613**	0,1628	0,0849	0,3398
<35 years old	0,1355	0,0865	-0,0471	0,2149	0,0731	0,1733	0,6023	0,4502
Not subjectively concerned by the poverty risk due to the age	-0,0338	0,1109	-0,105	0,2558	0,3726	0,2348	-1,3953***	0,5239
Not subjectively concerned by the poverty risk due to the gender	-0,0642	0,1025	-0,5229**	0,2652	-0,4048**	0,2203	-0,4131	0,5117
Thinks that inequality decreased in the past and keep decreasing in the future	0,2341**	0,1013	0,7613***	0,2804	0,4009*	0,2249	-0,0637	0,4193
'Far' from precariousness	0,0491	0,0813	-0,1648	0,2129	0,2349	0,1635	-0,6914**	0,3347
Does not think that poverty is caused by bad luck & does not want counterparts to redistribution	0,2463	0,2171	0,4708	0,5308	0,5094	0,4677	1,6302	1,138
Does not think that poverty is caused by bad luck & wants counterparts to redistribution	0,3865***	0,1471	0,2635	0,3772	0,4587*	0,2806	1,0282	0,7349
Thinks that poverty is caused by bad luck & wants counterparts to redistribution	0,3359***	0,1408	0,0805	0,3641	0,4256*	0,2712	1,6988**	0,7471

Note : For the Crossed dummy variable between self-determination and counterpart, the reference is given by people who do not think that poverty is mainly caused by lack of effort and do not agree with the fact that redistribution should be met by some counterpart. Other reference variables remain unchanged.

3.4 Test of Goodness of fit and conditional dependence issues.

In order to conclude on which model fits better the data, we ran the standard Likelihood-Ratio test[33] (LR-Test) on the significance of sub-samples of coefficients. Tables 6 (see appendix) report the tests. Whatever the saturated model retained (i.e. the largest specification), the social insurance group of coefficients does not work as well as the social beliefs and the reciprocity norms. The weak explanatory power of self-interest variables is in fact proved by

[33] The test is based on the statistic $-2(L_0-L_1)$ where L_0 is the likelihood for the fitted simpler model M_0 and L_1 is the likelihood for the saturated model M_1. The saturated model contains the group of parameters whose explanatory power is tested. When H_0 is true, the statistic follows a Chi-squared distribution with degrees of freedom equal to the number of parameters in L_1 minus the number of parameters in L_0.

the no-rejection of null hypothesis. By contrast, for social beliefs and social beliefs plus counterparts to redistribution variables, the tests allow to conclude that these norms matter for explaining support to public intervention.

The goodness of fit test indicates also that the model that explains better the demand for redistribution is the one incorporating the demand for counterparts.[34]

The LR-test can be used to explore further conditional independence and homogenous associations issues. As we said, the LR-test indicates that, when we control for social beliefs (or social beliefs and reciprocity), the demand for redistribution can be said to be conditionally independent of the self-interest variables. By contrast, the opposite is not true: holding constant self-interest variables, social beliefs exert an influence on the willingness to redistribute.

3.5 Results: sub-samples estimations.

Only three income classes provide interesting insights on the links between self-interest and social norms variables (respectively the second and third lower income classes and the second higher income class). In the second lower income class (between 533 € and 762 €), we can reject the null hypothesis for both sub-groups of coefficients. This means that norms matter but self-interest variables other than income do too. In the contiguous income class (between 762 € and 990 €), self-interest coefficients are significantly different from zero as well, while social norms do not pass the statistical test. An almost identical result is found for the second higher income class (between 1905 € and 2439 €), since for people belonging to this richer class it is also true that self-interest variables affect their attitudes towards redistribution much more than beliefs about causes of poverty and reciprocity expectations do. However, it is worth stressing that the signs of coefficients are the same for poor and rich individuals, and that they do not confirm the social insurance model. It is in fact true that those who are less (directly and indirectly) concerned by risks of precariousness are more in favour of redistribution than those who are directly concerned by such risks. At the same time, people who reckon that inequalities have increased and will keep increasing in the future are more supportive of public intervention than individuals who have the opposite view and this holds true whatever their income is.

[34] The outcome of the test for the two models of reciprocity was the following: for the model where demands for counterparts are crossed with self-determination beliefs the null hypothesis (H_0: $\beta_{SD*C} = \beta_{SD}$) is rejected at 1%, while in the second specification the null hypothesis (H_0: $\beta_{ED*C} = \beta_{ED}$) is rejected at 10%.

Some interesting exceptions to the homogeneity of views among poor and rich are the following. The subjective feeling of being exposed to risk due to their age is associated with a different attitude toward redistribution for low-income classes and high-income classes. Consistently with the self-interest explanation, low-income individuals who feel exposed to poverty risk due to their age are more in favour of redistribution than individuals belonging to the same class who does not have such a perception. By contrast, for rich people we observed the opposite: individuals subjectively concerned by the risk are also those who are less supportive of redistribution. A possible explanation for this difference is the fact that only low-income individuals are likely to be directly concerned by the risk of poverty. Rich individuals who think that their age-group is the most exposed to precariousness express instead a general view about a society trend.

It is more difficult to interpret the fact that among low-income individuals people who feel exposed to risk due to their gender are less in favour of redistribution (even though this would be in line with the fact that women are found to be less supportive of public intervention – and that most respondents feeling concerned by the poverty risk due to their gender are indeed women)[35]. Finally, note that high-income people who do not have any proximity with precariousness want more redistribution[36].

We also want to assess whether the social beliefs are correlated to income or if their impact on redistribution was independent. Interestingly, in the lowest classes of income as well as in the highest we observed no correlation[37]. This was confirmed by the fact that the coefficients of social beliefs variables were still significantly different from zero and affected the demand for redistribution in the same direction than for the whole sample. In general, no matter what is the income classes individuals belong to, self-determination and exogenous determination are still associated respectively to less and more demand for redistribution. (The only remarkable exception is given by the class of income between 1905 € and 2439 €, for which the coefficients of social beliefs have opposed signs to other classes. However, these coefficients

[35] Another possible explanation to the coefficient's sign comes from the nature of the explained variable. The dependent variable is given by the agreement to the state intervention for helping worst-off people. However, the original question asked to indicate whether it was on public or on private responsibility to stand-by have-nots individuals. If one reads the estimated variable in terms of private solidarity, women turn out to support private solidarity more than men do – which is a finding consistent with previous studies on this subject.

[36] This is in line with an altruistic or aversion to inequality model of redistribution. In what concerns the low-income classes, coefficients are not significantly different from zero.

[37] This finding is corroborated by some additional tests that we ran between models which contain the income variable and models which do not. When estimating the demand for redistribution without considering the income class of respondents, we could explain as much as when we used the larger specification including incomes.

are not significantly different from zero, and thus the main conclusion about the lack of correlation between norms and incomes holds true).

To conclude, the differences between the explanatory power of variables in full sample and sub-samples do not point out that extreme income classes have motivations for redistribution that go along their interest. The social insurance model does not fit better for categories of people who have a lot to earn or a lot to loose from public redistribution. At the same time, beliefs about causes of poverty and expectations about counterparts to redistribution are quite homogenous in all classes of income.

3.6 Estimation of specific items of public intervention.

With a similar econometric procedure, we estimated the support given to redistribution by considering as dependant variable the individual attitude toward a specific measure of social policy, as the level of minimal income. Table 10 reports the main results.

First note that income coefficients explain more than in previous estimations, as they are significantly different from zero for the highest classes of income[38]. Thus, individuals with an income greater than 1143 € are in favour of a decrease of the minimal income. However, as the subjective and objective exposure to risk variables are again insignificant, the validity of the social insurance model is still questionable. Social beliefs about the causes of poverty affect the desiderata toward the minimal income in the same way they influenced the demand for redistribution, thus those who believe that poverty is mainly caused by the lack of effort are in favour of decreasing the minimal income, while those who believe that poverty is caused by bad luck are in favour of increasing it. When social beliefs are crossed with reciprocity norms, we found that those believing in self-determination and expecting a counterpart from beneficiaries of public assistance are in favour of decreasing the minimal income.

TABLE 10 : ESTIMATION OF SUPPORT TO MINIMUM INCOME (Full sample)					
Intercept	-2,5324***	0,26904		-2,74087***	0,27468
Inter,2	1,14472***	0,051		1,14518***	0,05101
<2000 inhab,	0,43124***	0,21316		0,44223**	0,21293
2000 to 20000 in,	0,33413*	0,20445		0,34896*	0,20434
20000 to 100000 in,	0,18041	0,2178		0,19276	0,21776

[38] There is also a significant difference between the impact of socio-economic characteristics on the explained variable. Respondents under 35 years old are now significantly in favour of an increase of the RMI, while both the region and the urbanization rate do not affect significantly their opinion.

>100000 in,	0,24907	0,2132		0,26912	0,21313
Ile de France	0,27772	0,20886		0,31088	0,20914
North	0,05952	0,1402		0,06678	0,13926
East	-0,25536*	0,16156		-0,23237	0,16064
B.P.E.	-0,07493	0,12933		-0,09026	0,12931
B.P;W.	0,05078	0,12465		0,05117	0,12395
West	0,14698	0,11386		0,14647	0,11325
South West	-0,15586	0,11756		-0,14065	0,11735
South East	0,20468*	0,12548		0,2194*	0,12541
Postgraduates	0,033365	0,11012		0,06863	0,10971
Graduates	0,08439	0,10503		0,10002	0,10482
Undergraduates	0,11213	0,0946		0,13189	0,09439
High School	0,06809	0,08434		0,07399	0,08407
Primary I	0,0019063	0,10259		0,01032	0,10237
Primary II	-0,04156	0,25404		-0,01975	0,25334
Women	-0,05182	0,05857		-0,05065	0,05799
<35 years old	-0,23538***	0,06706		-0,23468***	0,06695
533 €<Income<762 €	-0,01114	0,10595		-0,01691	0,10581
762 €<Income<990 €	0,14072	0,09539		0,13809	0,09482
990 €<Income<1143 €	0,1498	0,11113		0,12803	0,11066
1143 €<Income<1448 €	0,24336**	0,10904		0,23034**	0,10849
1448 €<Income< 1905 €	-0,10139	0,14301		-0,09794	0,14277
1905 €<Income< 2439 €	0,28427**	0,13318		0,26743**	0,13249
>2439 €	0,38005**	0,1746		0,3452**	0,17338
Not subjectively concerned by the poverty risk due to the age	0,0801	0,08739		0,0801	0,08739
Not subjectively concerned by the poverty risk due to the gender	0,04887	0,07852		0,04887	0,07852
Think that inequality decreased in the past and keep decreasing in the future	0,09427	0,0745		0,09427	0,0745
'Far' from precariousness	-0,02112	0,0611		-0,02112	0,0611
Thinks that poverty is caused by lack of effort & does not want counterparts to redistribution	0,45776***	0,05797	Thinks that poverty is caused by lack of effort & wants counterparts to redistribution	0,70929***	0,12445
Does not think that poverty is caused by lack of effort & wants counterparts to redistribution	-0,14366***	0,05918	Thinks that poverty is caused by lack of effort & does not want counterparts to redistribution	0,36334**	0,17844
			Does not think that poverty is caused by lack of effort & wants counterparts to redistribution	0,24446**	0,12576

4. Conclusion.

In this paper we empirically discussed three models of social preferences, which offer competing explanations of the demand for redistribution. For that we considered the social insurance model, the social beliefs model and the reciprocity model.

The social insurance model is not validated by our econometric analysis, more specifically neither the income of respondents nor the subjective feeling of being exposed to a variously defined social risk, are good predictors of the demand for redistribution. Indeed, for high-income classes there is evidence that preferences for redistribution are not self-interested.

For our data, a more satisfying explanation of redistribution was found to be relying on social beliefs and reciprocity norms. In particular, individuals believing that lack of effort is the cause of economic precariousness demand less redistribution, while those who believe that unlucky exogenous circumstances determine poverty and exclusion support redistribution.

We thus outlined the existence of a joint effect between norms about determinants for getting ahead in life and the expectations of reciprocating public help. Individuals who believe in both self-determination and reciprocity are more in favour of redistribution than other individuals who, though sharing the same view about personal responsibility, do not expect any counterpart from redistribution. We interpreted this finding by suggesting that the existence of workfare measures might exert a positive effect on the stigmatisation felt towards recipients of public help. However, we pointed out that asking for counterparts could also indicate a willingness to sanction those who are deemed as not cooperative, namely those who are considered responsible for being worst-off.

In our paper we came to these conclusions by considering that social beliefs are exogenous and stables. This assumption is mainly rooted in a psycho-sociologists' paradigm (see for example Kluegel and Smith, 1986), but it is maintained in some recent economic works on the demand for redistribution (Fong, 2001 ; Corneo and Grüner, 2002). In Kluegel and Smith (1986) it is assumed that ethical values are settled in the early years of life, as they are shaped by the family background and the social institutions (school, leisure centres etc.). Ethical values are considered somehow stables and social beliefs explaining economic outcomes are deemed to endorse such ethical values.

However, it is likely that, in reality, social beliefs evolve with individual's experience and are revised by agents as long as they go through unpredictable events that lead them to modify their judgement about what explains poverty and economic success. The econometric model we used in this work assumes that beliefs are given, without raising the question of how

beliefs emerge and why they are as such. Moreover, as we use a cross-sectional survey, we could not clearly study whether these beliefs change over years and what is the individual's episode, if any, which stands crucial for this change. Some useful extensions of the present work might be carried out along these lines.

Finally, it would be also worth making a clear-cut distinction between social beliefs and ethical judgements about the determinants of economic outcomes. Following the traditional approach in the field of research on social preferences on public redistribution, our paper makes no difference between individuals' positive judgements (what one believes about what explain final outcome) and individuals' normative judgements (what one believes about what *should* explain final outcome). The empirical knowledge of both is needed to better understand redistributive preferences. However, as they might affect the demand for redistribution in very different directions, a more satisfying model should take into account them separately in order to establish how the potential dilemma between what one thinks *is* and what one thinks *ought to be*, is sorted out.

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Appendix.

Table 6 : Tests of Goodness of fit (Full Sample)				
Sample (2285 observations)	**Type of Test**	**Observed Statistic**	**Probability that H_0 is true**	**Outcome of the test**
Goodness of fit of the Model of social beliefs versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2 (11) =14,305	>0,1	**No rejection of H0**
	Likelihood Test that all Social-Beliefs Coefficients =0 (H_0: β_{SB}=0)	Chi2(2)=10,292	<0,001	**Rejection of H0 –at 1%**
Goodness of fit of Model of Reciprocity (1)- Self-Determination Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(11)=14,097	>0,1	**No rejection of H0**
	Likelihood Test that all Self-Determination Beliefs and Counterparts Coefficients =0 (H_0: β_{SD*C}=0)	Chi2(3)=17,161	<0,001	**Rejection of H0 –at 1%**
Goodness of fit of Model of Reciprocity (2)- Brute Luck Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(11)=14,988	>0,1	**No rejection of H0**
	Likelihood Test that all Brute Luck Beliefs and Counterparts Coefficients =0 (H_0: β_{BL*C}=0)	Chi2(3)=6,98	<0,1	**Rejection of H0 –at 10%**

Table 7 : Tests of Goodness of fit (Class of Income between 533 € and 762 €)				
Class of Income 1 (363 observations)	**Type of Test**	**Observed Statistic**	**Probability that H0 is true**	**Outcome of the test**
Goodness of fit of the Model of social beliefs versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(4) = 9,963	<0,05	**Rejection of H0 at 5%**
	Likelihood Test that all Social-Beliefs Coefficients =0 (H_0: β_{SB}=0)	Chi2(2) =5,496	<0,1	**Rejection of H0 –at 10%**

Goodness of fit of Model of Reciprocity (1)- Self-Determination Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(4)=11,851	<0,05	**Rejection of H0 at 5%**
	Likelihood Test that all Self-Determination Beliefs and Counterparts Coefficients =0 (H_0: β_{SD*C}=0)	Chi2(3)= 7,071	<0,1	**Rejection of H0 at 10%**
Goodness of fit of Model of Reciprocity (2)- Brute Luck Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi(4)= 11,713	<0,05	**Rejection of H0 at 5%**
	Likelihood Test that all Brute Luck Beliefs and Counterparts Coefficients =0 (H_0: β_{BL*C}=0)	Chi(3)= 1,45	>0,1	**No rejection of H0**

Table 7 : Tests of Goodness of fit (Class of Income between 762 € and 990 €)				
Class of Income 2 (552 observations)	**Type of Test**	**Observed Statistic**	**Probability that H0 is true**	**Outcome of the test**
Goodness of fit of the Model of social beliefs versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(4)=10,431	<0,05	**Rejection of H0 at 5%**
	Likelihood Test that all Social-Beliefs Coefficients =0 (H_0: β_{SB}=0)	Chi2(2) =0,489	>0,1	**No rejection of H0**
Goodness of fit of Model of Reciprocity (1)- Self-Determination Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(4)=10,508	<0,05	**Rejection of H0 –at 5%**
	Likelihood Test that all Self-Determination Beliefs and Counterparts Coefficients =0 (H_0: β_{SD*C}=0)	Chi2(3)= 1,651	>0,1	**No rejection of H0**
Goodness of fit of Model of Reciprocity (2)- Brute Luck Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi(4)= 9,993	<0,05	**Rejection of H0 at 5%**
	Likelihood Test that all Brute Luck Beliefs and Counterparts Coefficients =0 (H_0: β_{BL*C}=0)	Chi(3)= 2,788	>0,1	**No rejection of H0**

Table 7 : Tests of Goodness of fit (Class of Income between 1905 € and 2439 €)				
Class of Income 6 (156 observations)	**Type of Test**	**Observed Statistic**	**Probability that H0 is true**	**Outcome of the test**
Goodness of fit of the Model of social beliefs versus	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(4) = 8,881	<0,1	**Rejection of H0 –at 10%**

Model of social insurance	Likelihood Test that all Social-Beliefs Coefficients =0 (H_0: β_{SB}=0)	Chi2(2) =1,721	>0,1	**No rejection of H0**
Goodness of fit of Model of Reciprocity (1)- Self-Determination Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi2(4)= 8,449	<0,1	**Rejection of H0 –at 10%**
	Likelihood Test that all Self-Determination Beliefs and Counterparts Coefficients =0 (H_0: β_{SD*C}=0)	Chi2(3)= 2,592	>0,1	**No rejection of H0**
Goodness of fit of Model of Reciprocity (2)- Brute Luck Beliefs and Counterparts versus Model of social insurance	Likelihood Test that all Social-Insurance Coefficients =0 (H_0: β_{SI}=0)	Chi(4)= 11,589	<0,05	**Rejection of H0 at 5%**
	Likelihood Test that all Brute Luck Beliefs and Counterparts Coefficients =0 (H_0: β_{BL*C}=0)	Chi(3)= 7,607	<0,1	**Rejection of H0 at 10%**

Interpersonal Comparisons of Utility in Bargaining: Evidence from a Transcontinental Ultimatum Game[1]

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Abstract :

In this paper we present the results of a laboratory test of the "Transcontinental Ultimatum Game" implemented between India and France. The bargaining took the form of standard ultimatum games, but in one treatment Indian subjects made proposals to French subjects and in another treatment French subjects made proposals to Indian subjects. We observed that French→Indian bargaining mostly ended up with unequal splits of money in favour of French, while pretty equal splits were the most frequent outcome in Indian→French interactions.

The conceptual framework that we introduce to discuss the empirical evidence is a standard social reference norms model modified for taking into account the different marginal value of money of bargainers. Our explanation does not require the consideration of different cultural norms between France and India. It simply relies on relative standings comparisons between players, which occur in respect to the real earnings (that is monetary earnings corrected for a purchasing power factor) obtained in the game. Such norm is called local equity norm, and contrasted to a global equity norm which would encompasses the wealth of players beyond the game. According to what we observed, no beyond-game concern seems to be relevantly endorsed by subjects.

Keywords: Interpersonal Comparisons of Utility, Fairness, Bargaining experiment, Ultimatum Game

JEL code: A15, C70, C91, D63

1. Introduction

1.1. What is an "equitable share" ?

A generally held view is that, even if normative theories of Justice may rest on notions of inter-personally comparable utility, positive Economic theory can do without such notions. But when economic agents are found to be influenced by norms of Justice it might well be the case that an accurate descriptive theory needs to embody interpersonal comparisons of utilities. Dealing with situations where norms influence behaviors, questions about inter-personal utility comparisons are pragmatically relevant.

This paper considers such a case: a bargaining problem for which the "equitable", or "equal share", outcome is known to play an important role as a social reference norm, be it directly through Justice or Fairness concerns driving choices, or indirectly as a benchmark in the individuals' expectations. But the question of what exactly is supposed to be equal in an "equitable" outcome is not a trivial one, and different theories provide different answers to it. To tackle that question from a pragmatic point of view, we shall consider a situation in which one may find relevant arguments that term "equitable" quite different outcomes. Consider the three following arguments:

- Practical Justice requires that every occasion should be used to reduce as much as possible unjust inequalities. For instance if a small manna has to be divided between a poor and a rich individual, the largest part should a priori be given to the poor one. One can term this view the *compensation* theory of distributive justice.
- Practical Justice should not rest on inter-personal comparisons of well-being. For instance, if a divisible good has to be divided between two individuals they should each receive half of it, whoever they are. One can term this view the *formal equality* theory of distributive justice.
- Practical Justice means equalizing the 'local' benefits that individuals draw in a given situation. It relies on inter-personal comparisons of these benefits, and only of these. For instance, suppose that 10 tokens have to be divided between two individuals and that the first individual benefits less from each token than the second individual; then the first individual should receive more tokens than the second one. One can term this view the *local benefit* theory of Distributive Justice.

The aim of our study is to test these three competing theories. To that aim, we design and run a bargaining laboratory experiment in which rich and poor subjects played against each other; moreover, the stake over which subjects bargained was differently worth to them.

The participants were drawn from countries living under different economic conditions and the diversity was controlled along two dimensions: the income and the purchasing power. With respect to the first point, we chose a high level of income country (France) and a low level of income country (India). With respect to the second point (real value of money), the bargaining was done in US dollars and actual exchange rates were used to convert dollar pay-offs to final pay-offs (Indian and French subjects received respectively pay-offs converted into Indian rupees and into euros).

It is straightforward to see what are the implications of the aforementioned Justice Views in the context of transcontinental game between Indian and French. The Compensation View recommends that Indian students receive more in the game. By contrast, since the actual exchange rates and the prices structures are such that, for a given amount of money, Indian students can buy more than French students, the Local Benefits view advocates that French should receive more in the bargaining.

This allows to raise the main question of this paper: Which (if any) notion of Equity is relevant in order to describe bargaining behavior?

1.2. The Ultimatum game: standard results and explanations.

To discuss distributive justice actions, we implemented an Ultimatum Game (henceforth UG). In the UG two individuals have to reach an agreement about how to divide a good that is valuable to both them– a sum of money—a stake—a pie. In the sequential form of the UG, the first player (the sender) makes an offer about the division of the pie to the second player (the receiver). If the receiver accepts the offer, she receives the offered amount while the sender's payoff is the stake minus the offer. If the receiver rejects the offer, both players obtain a zero payoff.

Under the assumptions that players are rational, risk-neutral and have perfect and common knowledge, standard theory predicts that the receiver accepts any offer made by the sender. Any division of the stake is sustained by a Nash equilibrium—even the one where the sender makes an offer of zero to the receiver (and the latter accepts). In the sequential version of the UG, however, one can compute a unique sub-game-perfect equilibrium by considering that the optimal strategy for the receiver in the smallest sub-games of the game (the ones where the receiver has to choose between accept or reject the offer) is to accept any small offer

(epsilon). In the larger sub-game (that in the UG coincides with the game it-self) the strategy of the sender is to offer epsilon.

UG has been the object of an extensive experimental work (since Güth *et al.*, 1982), and this is for at least two reasons: the simplicity of the game and the notwithstanding large empirical puzzling evidence associated with it. Most striking anomalies are the following: offers that are inferior to the 20% of the stake are rejected with a probability that exceeds one-half, and the average offer is between 30 and 40% of the stake, depending on how high the probability of rejection is anticipated by the senders[3].

The fact that theory and actual behavior don't go along with seems to be very robust to the experimental protocol retained: context, subjects, kind and size of the stake, repetitions of the game and many other elements of the experiment have been variously framed and specified but, despite of all that, the main puzzling results still appear (see Camerer 2003 for an extensive discussion). In particular, UG was experimented by several authors in different countries[4] (since Roth *et al.*, 1991, and Buchan *et al.*, 1997). Although observations may differ from one country to another, the main qualitative findings are robust[5].

Several explanations have been provided to reconcile the apparent inconsistency of standard theory and empirical evidence, most of them paid attention to the social norms that individuals would bring into the game and that would affect their behavior beyond what standard theory commonly assumes. According to these explanations, the utility that players may derive from the game would incorporate social considerations such as the relative standing of each player after the bargaining is concluded, and the way the agreement is reached. On one hand, a large set of models has focused on the feelings of envy or of injustice that very unequal bargaining outcomes trigger. The degree of envy or aversion to inequality determines to what extent a division of the stake will be accepted even if different from the equal split (Bolton 1991, Fehr and Schmidt 1999). On the other hand, models of intentional or

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[3] For surveys on the UG the reader is referred to Güth (1995) or Roth (1995) and Camerer (2003).

[4] We are not aware of Indian studies or between countries ultimatum game.

[5] The most remarkable exceptions are the UG experiments run in 17 small-scale societies by Heinrich *et al.* (2001). Overall, offers varied substantially among these societies and rejections' behaviors were less homogenous than usual. However, no clear pattern emerged: in some societies rejections barely occurred -even at very low offers- while in some others respondents behaved very toughly, rejecting even equal split. As a plausible explanation of such variability, authors put forward the diversity of social institutions and fairness norms across these societies. These studies are not directly relevant for us, since France and India are large-scale societies in which money is the usual mean of exchange.

reciprocal behavior (Rabin 1993, Dufwenberg and Firchsteiger 1998) assume that a relevant rationale for action is to reciprocate what one's opponent is expected to do or to reciprocate what she actually does. Models of intentional or reciprocal behavior also incorporate notions of fairness or justice, not directly as an argument of the individual's utility function, but mediated by the individual's understanding of what is the norm in a given circumstance. Fairness is a rewarding response to fairness as well as unfairness is a retaliating response to selfishness; in the UG, receivers accept offers only when they consider them sufficiently fair and reject them otherwise.

1.3. Interpersonal comparisons and the transcontinental design

In both aversion to inequality and reciprocity models, it has been usually neglected that the marginal value of money for a player can be more than the consequence of the bargaining process as, for instance, when players have different preferences or live under different ex-ante circumstances. In most experiments the assumption that the marginal value of money is the same for all players is reasonable since subjects are anonymously drawn from the same population; hence ex-ante inequality (or other "inborn" difference) cannot be taken into consideration. But it is easy to imagine the case of two players that ex-ante are not equally better-off and that for this reason give a different marginal value to the money the negotiation can provide them with. In the standard version of the UG the amount to be divided is equal for both players, thus "a token is a token" for both the sender and the receiver. If it is common knowledge that (a) the monetary value of the token is the same for both players and (b) the utility of money is the same for both players, then it is perfectly legitimate to consider than the marginal value of one token left for the receiver is equal to the marginal value of the token the sender renounces to.

Although they do not relax the assumption of identical marginal value of money, Kagel *et al.* (Kagel *et al.* 1996) discuss how comparison of utilities can affect individual behaviour when one moves away from conjecture (a) and hence one can test whether the relevant rule for action is the willingness to compensate for different final utilities (expressed in real pay-offs) that any co-operative division of the surplus can ever produce. The experimental device adopted was to use two different exchange rates to convert experiment token payoffs in actual money payoffs. If fairness is relevant rationale for action the predictions are the following: when the high exchange rate is used for computing sender's gains, the sender should offer more than the equal split in order to grant both herself and her opponent with the same amount of money. By contrast, when the sender is the low –exchange rate player, she should

offer less than the equal split. In both cases, it is assumed that the division of the stake is the mean by which final utility of money equality is achieved. Experimental evidence supports this prediction only in some regards: when senders had higher exchange rate, offers stayed close to the equal split during the first three rounds of the game (that behaviour was called by Kagel *et al.* the "self-serving norm of fairness") and increased afterward as rejection rates were very high (53%). When receivers had higher conversion rates, senders' offers were not materially different from the equal money split offer (25 out of 100). On average, rejection rates were 14%.

The main innovation in our experimental design is the following. We let it be common knowledge that players who participate in the ultimatum game are different ex-ante in two respects. First they probably have a different monetary value of the experimental currency (US dollar) because, with one dollar one can buy much more goods in India than in France (about four or five times more). Second, they probably have a different overall income because the per capita GDP is much larger in France than in India (about 50 times larger). With respect to Kagel *et al.*'s study, this second element is original. Our goal is to study how a twofold source of diversity between players (the game-related one and the actual life-circumstances one) affects the comparison of utility that players perform during the bargaining. The design of the experiment consists of transcontinental treatments (sender and receiver from different countries) and of continental treatments (sender and receiver from the same country) as a benchmark.

As explained above, interpersonal comparison between players may in principle occur at different levels and thus variously influence their behavior in the game. Our results clearly point out that the relevant reference point for such comparison is the equality of real pay-offs, which is consistent with recommendations of local benefits theory of distributive justice and inconsistent with both the compensation and the formal equality theories.

The plan of the paper is the following: Section 2 describes the experimental protocol and the results. Section 3 is devoted to the theory: we develop several variants of the linear Aversion to Inequity model (Fehr and Schmidt, 2000) that allow us to distinguish between local and global notions of inequity expressed in real or nominal terms. With the help of these models, we can submit the conclusion that the relevant notion of Inequity is the local one expressed in real terms. Section 4 briefly discuss the relevance of this point with respect to our understanding of which kinds of justice norms are internalized by the individuals.

2. The experiment

2.1. The experimental protocol[6]

The design of the experiment consists of four treatments. Senders and receivers are drawn from two countries (France and India) in the transcontinental bargaining and from the same country (either France or India) in the within country bargaining. Two treatments are transcontinental: FtoI (a French sender makes proposition to an Indian receiver) and ItoF (an Indian sender makes proposition to a French receiver). The two others, the within-country treatments, are benchmark treatments: ItoI (an Indian sender makes an offer to an Indian receiver) and FtoF (a French sender makes offer to a French receiver).

Type of treatment	Transcontinental	Transcontinental	Within-country	Within-country
Treatment	Sender : Indian Receiver : French	Sender : French Receiver : Indian	Sender : Indian Receiver : Indian	Sender : French Receiver : French
Code of treatment	ItoF	FtoI	ItoI	FtoF

Table 1. Experimental Treatments.

In both transcontinental and within-country experiments, twenty subjects participate in each session and play six one-shot Ultimatum Games with the "absolute stranger" protocol. In each game, the amount to be divided is 10 US dollars, offers can be made in halves of dollar and two games out of six are paid. The conversion rate used for the payment is the current exchange rate of the US dollar into the local currency (Euro and Indian Rupee)[7]. The exchange rates used are common knowledge. Moreover, the subjects receive a sum of 2 US dollars for showing up at the experiment.

For the transcontinental treatments, the subjects are indicated that they play with Indian (French) students, and that the game decisions are transmitted via an Internet-Chat Connection. Some basic pieces of information are given: the per capita GDP of India and France and the price of some commodities in the two countries (in US dollars). To inform subjects about the purchasing power of one dollar in each country, we chose commodities that

[6] The reader is referred to the appendix for the English version of the instructions distributed to the subjects.

[7] The exchange rate used for Euro was $1 for €1.1. The exchange rate used for Indian Rupee was $1 for 47 Rps.

are likely to be part of students' expenditures in both countries: coffee in the university campus, cinema ticket, music CD etc[8].

The experiment was run with a paper and pencil protocol. In transcontinental sessions one experimentalist in each country was transmitting decisions through an Internet-Chat Connection. In each country, the subjects were gathered in a classroom and received the instructions and the experimental material (game-cards, ID, envelopes). After instructions were read and a test of understanding had been conducted, the experiment was started. To simplify the logistics of the experiment, sessions where Indian (French) students were all senders and French (Indian) students were all receivers, were only organized. In the senders' classroom, the subjects were asked to write down their offer and to put the offer in the envelope. Once all the subjects had finished, the envelopes were collected and transmitted by the experimentalist with the help of a Chat Connection to the other country. Offers were then copied in the receivers' cards and distributed to the subjects; the receivers were then asked to take their decision to accept or to reject the offer. The receivers' cards were then collected, and acceptances and refusals were transmitted to the senders in the other country. For the within-country experiment the procedure was roughly the same with the exception of decisions transmission. In the latter treatments, in fact, senders and receivers sat in two different rooms and communication of subjects' decision was carried out in a third room by experimentalists.

The procedure was repeated six times. After the end of the sixth round, the subjects filled a questionnaire on the experiment, answering questions on their choices and on the perception of their opponents' ones[9]. Meanwhile the random drawing was done and the two selected rounds for the final payment were communicated to subjects.

French students received instructions in French and Indian students received instructions in English. A special attention was paid to the instructions' translation, to make sure of their closeness: a first draft of instructions was written in English on the basis of standard UG instructions, and translated into French. The definite version of instructions in both languages was done after a common revision, in order to make instructions equally understandable for all the subjects and as less biased as possible.

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[8] For a complete presentation of purchasing power information used in the experiment, the reader is referred to the instructions in the appendix.

[9] We do not report on the results of this questionnaire since they are well in line with our interpretation of the observations.

2.2. Main predictions

Taking into the account the characteristics of the Transcontinental Protocol (difference of beyond-game status, difference of purchasing power, equal nominal value of the stake), one may expect three kinds of behavior. If the first factor (beyond-game wealth effect) is relevant, we should observe that the outcomes of bargaining are always in favor of Indian subjects (the interaction would allow for compensation between ex ante differences between players). If the second factor plays a crucial role (different value of one dollar in the two countries), then we should observe unequal splits occurring in the opposite direction, that is in favor of French subjects. The rationale behind this peculiar division is to equalize the real pay-off of players. Finally, if the nominal value of the stake matters, then no different behavior should be observed in transcontinental treatments with respect to previous with-in country experiments, nor one should find any significant differences between FtoI and ItoF treatments. Has it been so, equal nominal split should be observed.

As specified above, our hypothesis is that the country of residence of players may play a role in shaping the interpersonal comparison of utility. Specifically, we do not assume that cultural norms themselves exert such an influence but, instead, that the country of residence of the players indirectly affects the equity norm that sustains the agreement. In fact the equity norm is endogenously settled as to account for the differences of purchasing power and of income between the two countries. In principle, however, we cannot rule out the fact that Indian subjects and French subjects behave differently in ultimatum games for reasons intrinsically related to their culture. It is thus necessary to provide a counter-proving test, which invalidates the cultural discrimination story. The comparison between within-country treatments is the natural test for this latter point.

No standard experimental test of the Ultimatum Game has previously been conducted in India or France (to our knowledge), so we needed benchmarks cases to be compared with transcontinental treatments. The objective of running with-in country treatments is twofold. First, it allows to establish if bargaining norms are the same than those previously observed using an almost identical protocol and in countries like United States, Israel, Japan etc. In particular, we want to see if there are any differences between French to French negotiation and Indian to Indian one. Secondly and more importantly, we want to compare the with-in country and the transcontinental treatments to test whether the identity of the subjects affect bargaining outcomes.

3. Results

All in all, we ran eleven sessions during 2002 and 2003. Six transcontinental sessions between Delhi and Grenoble were run: three ItoF sessions, and three FtoI sessions. Moreover, three ItoI sessions were run in Delhi and two FtoF sessions were run in Grenoble.[10] On the whole, the results of the FtoF sessions are consistent with the usual results of standard ultimatum game experiments. That is why we only ran two sessions with this treatment. The date and the average earning of each session are reported in Table 2. On average, within-country sessions lasted one hour, while transcontinental sessions lasted one hour and half.

Session ID	Date	Treatment	Number of subjects	Average Earning in US$	Average Earning in Local Currency (Rps: Indian Rupees, € : Euro)
ItoF-S1	02/19/2002	Indian Senders-French Receivers	10 couples	Senders: $10.75 Receivers: $7.42	Senders: 515 Rps Receivers: €8.1
ItoF-S2	02/21/2002	Indian Senders-French Receivers	10 couples	Senders: $8.77 Receivers: $8.15	Senders: 420 Rps Receivers: €9
ItoF-S3	02/11/2003	Indian Senders-French Receivers	10 couples	Senders: $10.75 Receivers: $8.27	Senders: 515 Rps Receivers: €9.1
FtoI-S1	02/20/2002	French Senders-Indian Receivers	10 couples	Senders: $14.45 Receivers: $6.85	Senders: €15.9 Receivers: 330 Rps
FtoI-S2	02/22/2002	French Senders-Indian Receivers	10 couples	Senders: $17.35 Receivers: $6.45	Senders: €19.1 Receivers: 310 Rps
FtoI-S3	02/12/2003	French Senders-Indian Receivers	10 couples	Senders: $14.8 Receivers: $7.9	Senders: €16.3 Receivers: 380 Rps
ItoI-S1	02/18/2002	Indian Senders-Indian Receivers	10 couples	Senders: $14.4 Receivers: $6.6	Senders: 682 Rps Receivers: 321 Rps
ItoI-S2	02/03/2003	Indian Senders-Indian Receivers	10 couples	Senders: $13.2 Receivers: $7.6	Senders: 634 Rps Receivers: 365 Rps
ItoI-S3	02/03/2003	Indian Senders-Indian Receivers	10 couples	Senders: $11.2 Receivers: $7.7	Senders: 538 Rps Receivers: 370 Rps
FtoF-S1	10/23/2002	French Senders-French Receivers	10 couples	Senders: $13.1 Receivers: $9.1	Senders: €14.3 Receivers: €10.1
FtoF-S1	10/24/2002	French Senders-French Receivers	10 couples	Senders: $13.1 Receivers: $9.1	Senders: €14.3 Receivers: €10.1

Table 2: Sessions details

[10] A pilot session was run for the transcontinental protocol of the UG. This allowed for improving some aspects of the experimental procedure and for checking the feasibility and the effectiveness of the experimental communications between countries.

As we already explained, every subject played consecutively six ultimatums, changing opponent at each new round. Before dealing with each period's own features, we start with an overall look at the data.

For each session, the main statistics (all periods confounded) are reported in table 3. When looking at pooled periods data, it appears that results of ItoF, ItoI et FtoF treatment sessions are in line with what normally observed in standard UG experiment. In fact, our results do support previous findings such that any offer below the 20% of the stake is rejected with a probability of (0,4-0,6) and that the average offers are between 30 and 40% of the stake. By contrast, what we observed under the treatment FtoI is radically different from the usually observed facts. Mean offers are low (between 23% and 32% of the stake) and, conditionally to these offers, rejection rates are significantly lower than in standard UG.

Sessions	FtoF[11]	FtoI	ItoF	ItoI
Number of period	6	6	6	6
Number of couples	20	30	30	30
Average Offer	3.48	2.63	3.92	3.53
Modal Offer	3	2	5	5
Median Offer	3.5	2.5	4	4
Standard Deviation	1.14	1.01	1.08	1.46
Global Frequency of Rejection	22.5%	12.2%	20.0%	9.4%

Table 3: Global statistics

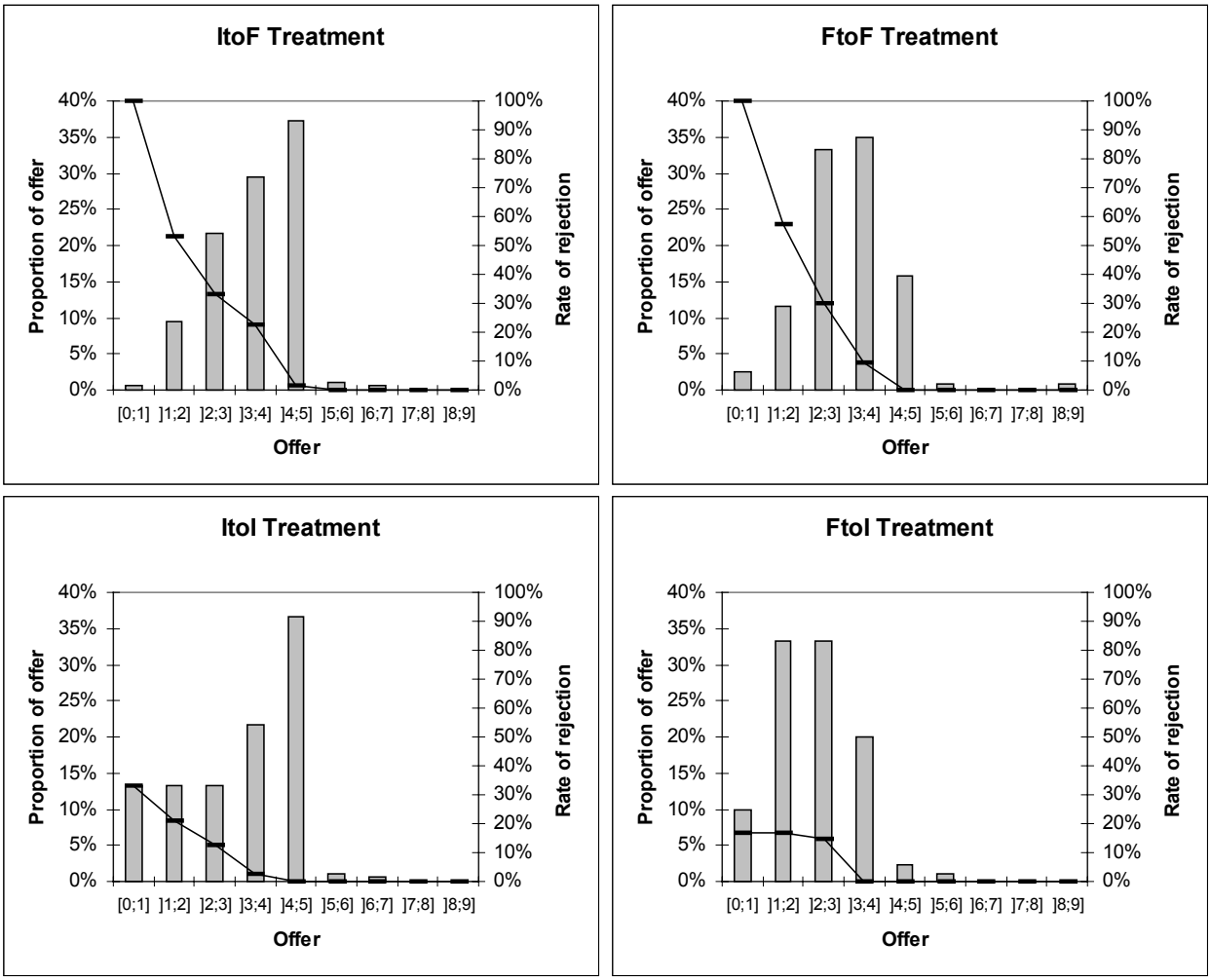
The outlook of pooled periods data is useful to have a general idea of differences between transcontinental and within country UG. However, an in-depth inspection on how offers

[11] Eleven couples participated in this session. In spite of going successfully through both instructions and test of understanding, one subject misunderstood the protocol and sent to her opponent an offer containing the amount of money he intended to keep for himself. This happened for all the duration of the experiment. He sent proposals of 6 and 7 $. After having analysed the whole results, we decided to exclude observations concerning him (and related responses by his opponents), but we considered valuable the rest of the data. We could in fact verify that the misunderstanding of the subject did not sensibly affect the behaviour of players who met him when they played with the others senders

evolve over periods shows the pooled periods statistics are not adequate to wholly account for players' behavior. Indeed, two different temporal trends emerged. We observed a significant drop of proposals in treatments where the respondent was Indian, while offers remained almost unchanged in the treatment where the respondent was French. Before moving into the detailed discussion of the inter-periods evolution of offers, we present the distribution of offers and rejection rates.

3.1. Offers and rejection decisions.

Figure 1 reports the distribution of the offers and the rate of rejection. The subjects had the possibility of making offers with halves of dollars, but most of the offers were integers; therefore, in order to have more readable pictures, we pool the offers \$5 with \$1, \$1.5 with \$2, etc. Offers of \$0 have not been observed and offers higher than \$5 are very rare[12].



[12] Offers higher than 5\$ were observed with the following frequency : two observations out of 120 for the FtoF treatment, two observations over out of 180 for FtoI, 3 observations out of 180 for ItoF and 3 out of 180 for ItoI.

Figure 1: Offer distribution and rate of rejection
(columns represent the percentage of offer and the curve represents the rate of rejection)

The comparison of the offers between ItoF and FtoI treatments is striking: the Indian senders were more generous towards French receivers than French senders towards Indian receivers. The average offer in the ItoF treatment is $3.92, while it is only $2.63 in the FtoI interactions. At the same time, Indian receivers were more conciliating than the French receivers. In fact rejection rates for offer below $3 is 19% in the FtoI treatment. The corresponding feature for the FtoI treatment is 55%. The difference between these rates can be ascribed to a different rejection threshold between Indian and French subjects. The fact that thresholds are different for Indian and French students is also confirmed by what we observed in within-country treatments, where senders met receivers of same nationality. In FtoF treatment, the rejection rate relative to offers less than $3 is 60% while it is 25% in the ItoI treatment.

On the basis of these results, we can conclude that the rejection threshold of Indian subjects is definitely lower than the French subjects' one. The difference between the minimum amount of money that a player is ready to accept is a relevant factor for understanding the outcome of interactions. In addition, our data show that the rejection threshold is not common knowledge among players, even when one plays against someone coming from her same country. The evolution of proposition along the six rounds of the game can be explained by the fact that senders look for the acceptation threshold until they find the 'right' one.

3.2. Dynamics pattern

The round mean offer and the round rate of rejection for the various treatments are reported in Figure 2.

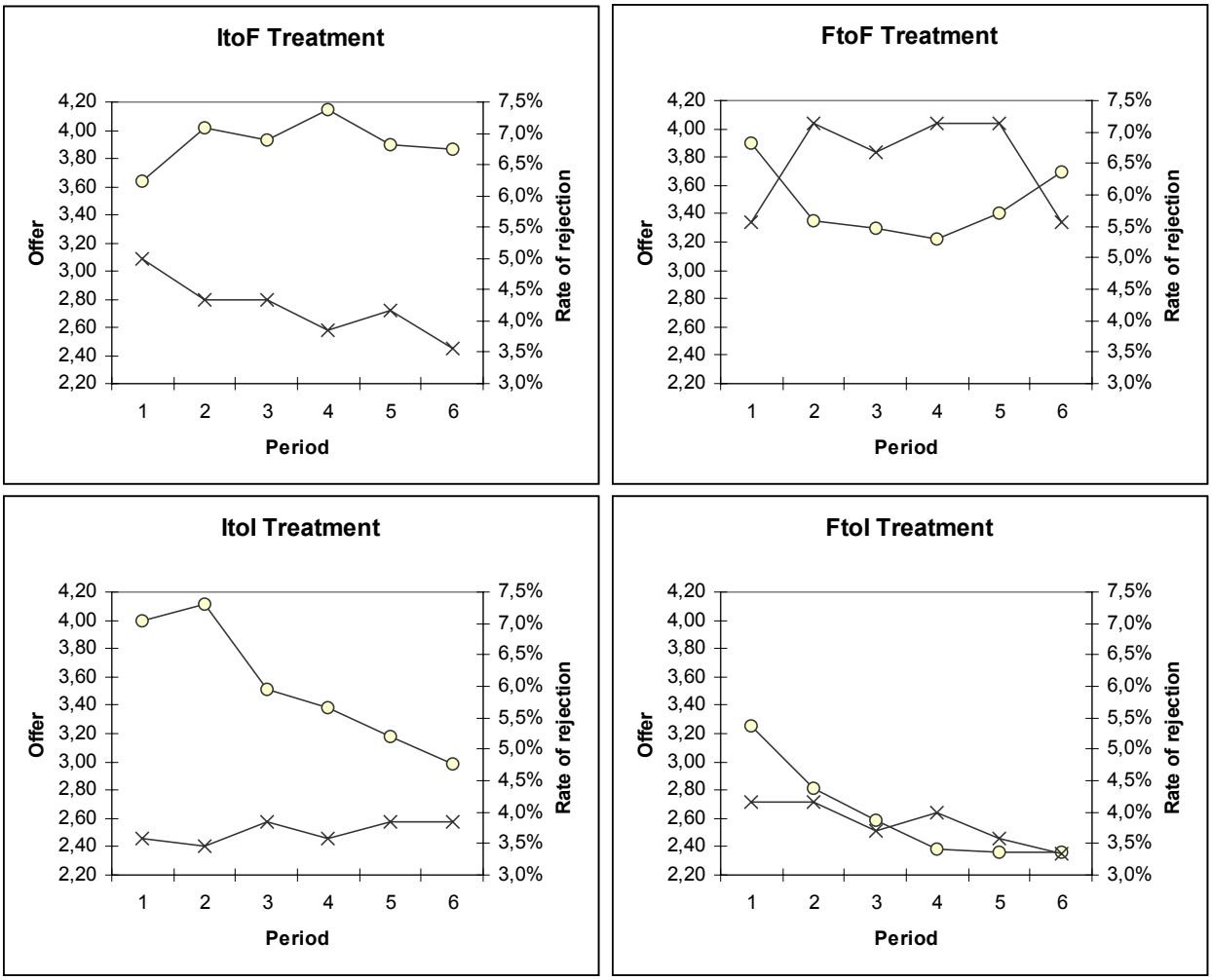


Figure 2: Offer and rate of rejection evolution
(The circle curve represents the average offer and the cross curve represents the rate of rejection)

To start with, it is instructive to see how the first round offer is very similar across all four treatments. The mean offer is around 3.3$ in the FtoI treatment and nearly 4$ in the ItoI treatment. Excepted for these two treatments, the comparison between mean offers by treatment does not reveal any statistically significant difference (at the 5% threshold)[13]. With the only exception of FtoI treatment, the observed offers are not different from what is usually found in this game.

By contrast, we found that, when repeating the game, two different trends emerged depending on the receiver's nationality, and irrespective of the sender's nationality. In particular, offers made to Indian receivers decreased progressively over successive rounds while offers sent to French receivers almost remain unchanged from the first period. The

[13] The null hypothesis that offers are identical across treatments ItoI and FtoI is rejected by a Mann-Whitney test at the .05 level (P = 0.024). We can not reject the null hypothesis across the others treatment at the same significance level.

pattern of offers over time can be explained by both the propensity to reject of receivers and by the consequences of rejection and acceptation on sender's following strategy. Concerning the latter, senders' reaction seems to be quite homogenous (see Table 4).

	Offer rejected in the previous period			Offer accepted in the previous period		
Treatment	**Increase offer**	**Maintain offer**	**Decrease offer**	**Increase offer**	**Maintain offer**	**Decrease offer**
FtoF	**17 (68%)**	**8 (32%)**	**0**	**3 (4%)**	**49 (65%)**	**23 (31%)**
FtoI	**15 (68%)**	**7 (32%)**	**0**	**4 (3%)**	**73 (57%)**	**51 (40%)**
ItoF	**29 (85%)**	**5 (15%)**	**0**	**7 (6%)**	**73 (63%)**	**36 (31%)**
ItoI	**10 (77%)**	**3 (23%)**	**0**	**19 (14%)**	**59 (43%)**	**59 (43%)**
Total	**142**	**46**	**0**	**66**	**508**	**338**

Table 4. Offer evolution after a rejection or an acceptance

In fact senders increased their offer or kept it unchanged after a refusal, while they maintained it unvaried or diminished it when their proposal was accepted. At the same time, as said above, the Indian acceptation threshold is lower than the French one. Overall, we observed that treatments where receivers are Indian are treatments such that offers fall over time[14]. Senders keep diminishing their offers without triggering any nasty reaction on the other side. In the sixth round, the mean offer is 'only' \$2.4 in the FtoI treatment and \$3 in the ItoI treatment.

When receivers are French, the story is completely different. In these sessions refusal occur more often whenever offers are below \$ 3. By consequence, senders do not significantly vary their offer over the game and this is why proposed and accepted splits almost remain unchanged during the six rounds. In the last round, the mean offer is \$3.7 in the FtoF treatment and is \$3.9 in the ItoF treatment. A statistical test allows us to conclude that no significant difference exists between first round offers and last round offers. [15]

From these findings, it appears that the repetition of the game, even if with different opponents, allows senders to identify the threshold up to which receivers are ready to accept offers. Senders' learning is made out in terms of offer reduction, which can be seriously

[14] The null hypothesis that offers are identical across the first and the last period is rejected by a Wilcoxon signed-rank test at the .01 significance level for treatments ItoI (P = 0.0087) and treatment FtoI (P = 0.0013).

[15] The null hypothesis that offers are identical across the first and the last period is not rejected by a Wilcoxon signed-rank test at the .01 level for treatments ItoF (P = 0.2993) and treatment FtoF (P = 0.4420).

sanctioned by refusals when the threshold is overcome. Thus, the last period offers integrate senders' learning about opponents' propensity to accept.

Treatment	ItoF	FtoI	ItoI	FtoF
Number of couples	30	30	30	20
Average Offer	3.87	2.37	2.98	3.70
Modal Offer	5	2	1	4
Standard Deviation	1.06	0.98	1.52	0.68
Global Frequency of Rejection	0.07%	0%	0.13%	0.1%

Table 5: Last period statistics

For each treatment, the main statistics concerning the last period are reported in table 5. Here we can see that proposals addressed to French respondents are in line with standard usually observed facts in UG. For the ItoF treatment, the mean and the modal offers are respectively \$3.87 and \$5. These findings are similar to those obtained for the FtoF treatment, where the mean offer was \$3.70 and the modal offer was \$4. On the other hand, the last period proposals made to Indian are sensibly lower than that. In fact, mean offers for FtoI and ItoI treatments are respectively \$2.37 and \$2.98. Modal offers are also quite low, being \$2 for the FtoI treatment and 1\$ for the ItoI treatment.

It emerged from the statistical analysis that senders make different offers according to the nationality of responders. In fact French senders' proposals are significantly different when they are to be received by an Indian or a French respondent[16]. Analogously, offers coming from the Indian senders vary with the respondents' identity[17].

Overall, offers made to Indian subjects are, everything else being equal, more unfavourable than offers made to French subjects. Facing a French sender, an Indian respondent is confronted with lower offer than a French respondent. Alike, an Indian sender is more likely to come up with a higher proposed share when the receiving end of the proposal is an Indian, rather than a French. This kind of finding does not support the prediction for which

[16] The null hypothesis that offers are identical across treatments FtoI and FtoF is rejected by a Mann-Whitney test at the .05 level (W = 302.5 and p.c. = 0.0000).

[17] The null hypothesis that offers are identical across treatments FtoI and FtoF is rejected by a Mann-Whitney test at the .05 level (W = 302.5 and p.c. = 0.0000).

bargaining outcomes take into account beyond-game wealth differences. By the same token, our results do not validate the conjecture of equal nominal amounts division. Indeed, the (observed) splits in transcontinental bargaining are significantly different from the (observed) splits in with-in country bargaining. All these facts considered, we shall conclude that the relevant explanation behind TUG is the willingness to compensate for a difference of purchasing power between India and France; to reach this conclusion, a more precise theoretical framework is needed, that is developed in the next section.

4. Theoretical framework

4.1. Existing models

Following Fehr and Schmidt (2000)[18], we distinguish several theories that have been introduced for explaining the anomalies observed in the experimental context of bargaining, notably in UG experiments. Though presenting somewhat different explanations, all these theories start from the inadequacy of the standard *homo economicus* model in a context where individuals have to share a certain amount of resources they're delivered with.[19] *Homo economicus* paradigm assumes that individual preferences are self-regarding and outcome-regarding. Experimental evidence challenges both assumptions, insofar observed anomalies in experiments are believed to be explained by the fact that subjects are other-regarding and process-regarding[20] (i.e. subjects would not only care about their own absolute payoff and they would be concerned with some procedural aspects of the experimental bargaining, as the role assignation or the initial endowment etc). Two sorts of explanation have been provided: the first view –- referred to as the Relative Payoffs Reference Point Models (Brandts and Sola 2001) and called for simplicity the "Fairness View" — consists in broadening the sphere of individual's rationales for action. The well-being of the others and/or the concern for their

[18] Fehr E. and Schmidt K. M., "Theories of Fairness and Reciprocity—Evidence and Economic Applications „ Working Paper presented at the World Congress of the Econometric Society in Seattle.

[19] Note that we deliberately do not take into consideration the alternative explanations given to UG anomalies, as the adaptive learning one or, more generally, the ultra-long hypothesis one. See Binmore (1998) for a survey.

[20] Gintis (2000).

relative performance are here to be envisaged as relevant motives for individual choice[21]. The other view —"the intention-based reciprocity view" based on psychological games[22] — assumes that one's own behavior is conditioned by the expectations on what the other's behavior could be, or by the intentions that a player would be supposed to express by taking such and such other decision. Henceforth, we shall focus exclusively on the first approach.

Fehr and Schmidt (Fehr and Schmidt 1999) assume that individual preference linearly depends on one's own payoff and on the difference between this payoff and the opponent's one. Their *Homo Egalis*[23] maximizes the following utility function u_i:

$$\begin{aligned} u_i &= x_i - \alpha_i(x_j - x_i), x_j > x_i \\ u_i &= x_i - \beta_i(x_i - x_j), x_i \geq x_j \end{aligned} \qquad (1)$$

With x_i the nominal pecuniary payoff of individual i, α the parameter which captures the equity concern when one has less than the other ($\alpha > 0$) and β the parameter which captures the equity concern when one has more than the other ($0 \leq \beta \leq 1$). Because we shall study variants of this model, it is useful to refer to it as the model of linear *Aversion to Local Inequity in Nominal terms*, in short: the *ALINom* model.

In the ultimatum game, the sub-game perfect equilibrium defines a division (x_i, x_j)* of the stake such that the sender's utility is maximized under the constraint that receiver does accept

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[21] Let us consider a bargaining game between player *i* and player *j*. Models of fairness can be classified as: 1) Model of Altruism (Andreoni and Miller, 2002; Charness and Rabin, 2002) : the utility function of player *i* is increasing in the payoff of player *j* ; 2) model of Relative income and Envy (Bolton, 1991, Kirchsteiger 1994): the first partial derivative of utility function of player *i* with respect to the ratio of *i*'s payoff to *j*'s payoff is strictly positive when the payoff of player *j* is inferior to the player *i*'s one and zero otherwise ; 3) model of Inequity Aversion (Fehr and Schmidt, 1999 ; Bolton and Ockenfels, 2000): player is altruistic towards other players if their payoff are below an equitable benchmark, but she feels envy when the payoff of the other player exceeds this level. In the second model, the utility function is assumed to be weakly increasing and concave in player's own payoff; for any given payoff, the utility function is strictly concave in player's *i* share of total income and obtains a maximum for equal split.

[22] Rabin (1993), Dufwenberg and Kirchsteiger (1998), Falk and Fischbacher (1999), Charness and Rabin (2002).

[23] Gintis 2000.

the offer; one can thus compute the rejection threshold and the SPE offers and estimate the parameters of aversion to inequality in the population under observation.

In the following part of the paper, we discuss a model which generalizes the model of Fehr-Schmidt ; in fact, we could have used an other specification for the aversion to inequity utility function (as the model proposed in Bolton and Ockenfels (2000) or the one proposed in Chairness and Rabin (2002). For a simple Ultimatum Game, in fact, these three models give no substantially different predictions while they differ for other bargaining games and non-cooperative games. The discussion of the relevancy of each model is thus beyond the scope of the paper, and new data by the use of the transcontinental protocol of these experiments are required[24].

4.2. A theoretical framework for the TUG

As in any other ultimatum game, individual behavior we observe in TUG rests on strategic considerations and to some extent on some fairness norms. The second factor is relevantly affected by the interpersonal comparison of players' utility. When subjects belong to the same population, a reasonable assumption is to consider that the interpersonal comparison of utility comes down to a comparison of two players' pecuniary payoff[25] (i.e. the relative share of each one of them, as it happens for Fehr-Schmidt's *homo egalis*). It is as such since it makes sense to consider that without any precise knowledge about the opponent's preferences, each player forms his beliefs on the other on the basis of what he knows of individuals "randomly chosen" in that group. In experimental interactions, players all have the same information about the kind of person they are matched with, and relevant common knowledge is, for instance, that they all are students living in the same city. Finally, as the attribution of roles in the bargaining is decided randomly at the beginning of the experiments, it makes no sense to consider that the population of senders is different from the population of receivers.

A relevant question in a transcontinental framing is to verify if individuals who belong to different societies have different preferences for equity according to their culture. If we think that the only difference between a TUG and a standard UG is the fact that individuals joining it have different norms of fairness due to their culture, we can keep, for instance, the Fehr-Schmidt model and interpret the α and β parameters as a taste for equity specific to each country. We thus would come up with 4 parameters rather than 2. But, is this required to

[24] Moreover, changing the parameters, the model of Charness and Rabin for two players is not different from the Fehr and Schmidt one.

[25] Considering that players are equally risk neutral and that they belong to the same income-class.

explain players' behavior? The following discussion will show that in fact we don't need to multiply the number of parameters and that, on the contrary, we can keep the same logic of Fehr and Schmidt's model by playing on the nature of payoffs involved in the negotiation.

Suppose that player *i* derives from the game interaction a "game-utility": $u_i = (y_i, y_j)$ that depends on two arguments: y_i and y_j that respectively describe the outcome of the game for *i* alone and *j* alone. Utility is supposed to be increasing and concave in its first argument and, under certain conditions, increasing and concave in its second argument, and we shall specifically consider the same linear form as Fehr and Schmidt:

$u_i = y_i - \alpha\ (y_j - y_i)$ *for* $y_j > y_i$

$u_i = y_i - \beta\ (y_i - y_j)$ *for* $y_i > y_j$

and we shall discuss what exactly y_i and y_j must be.

Consider the two conditions:

(i) The outcome of the game for a player can be described in terms of what she obtains *in the game* (or "locally"), without reference to the player situation outside the game.

(ii) The comparison of utilities is performed at the *nominal* monetary payoff, without taking purchasing power into account.

Then, letting $y = x$, one obtains the Fehr and Schmidt's model that we labeled *ALINom, in which the relevant social reference norm is the equality of game payoffs in nominal terms*. A natural question is now: what is the relevant social reference norm in a TUG?

Suppose that each player makes use of the actual exchange rate to compute her final utility: call θ_i the purchasing power rate to be used when one wants to convert dollars in final commodities (for instance, according to what specified in the experimental instructions θ_i can measure how many cinema tickets player *i* can buy when she earns one dollar; for French students θ_i is about 0.2 while for Indian students θ_i is about 1). Here, we let $y_i = \theta_i x_i$, and the modified Fehr and Schmidt's model reads:

$$\begin{aligned} u_i &= \theta_i x_i - \alpha(\theta_j x_j - \theta_i x_i) \text{ for } \theta_j x_j > \theta_i x_i \\ u_i &= \theta_i x_i - \beta(\theta_i x_i - \theta_j x_j) \text{ for } \theta_i x_i > \theta_j x_j \end{aligned} \qquad (3)$$

Utility of player *i* is thus increasing in her "real" payoff (i.e. in the amount of goods she will buy in receiving x dollars) and, holding this payoff constant, has a maximum for $x_i = (\theta_j / \theta_i) x_j$. In other words, the second argument of the utility function describes the concern for equity that two different ex-ante players have when confronted in an ultimatum. Note that in this case the ex-ante difference corresponds to a pure difference of purchasing power in the two countries: as we have already noted above one dollar is much worthier in India than in France. Looking for a social norm of equity means here to equalize material payoffs and thus equalize monetary payoffs after having corrected for the purchasing power. The reference for equity concerns is still the incomes obtained by the players in the game only. We can call this model the linear model of *Aversion to Local Inequity in Real terms* (in short: the *ALIReal* model).

Finally, consider the case $y_i = R_i + \theta_i x_i$ where the interpersonal comparison of utilities is broader than the one proposed above, that is in the equation (3),.

Then:

$$\begin{aligned} u_i &= R_i + \theta_i x_i - \alpha_i((R_j + \theta_j x_j) - (R_i + \theta_i x_i)) \, for \, (R_j + \theta_j x_j) > (R_i + \theta_i x_i) \\ u_i &= R_i + \theta_i x_i - \beta_i((R_i + \theta_i x_i) - (R_j + \theta_j x_j)) \, for \, (R_j + \theta_j x_j) < (R_i + \theta_i x_i) \end{aligned} \quad (4)$$

The yardstick of social comparison is now the individual *overall* income, i.e. the individual's income beyond the game (R_i) plus the real gain obtained in the interaction ($\theta_i x_i$). This variant of the Aversion to inequity could be called the linear model of *Aversion to Global Inequity in Real terms* (in short: the *AGIReal* model).

As we shall explain later in more details, the *ALIReal* model seems to be more consistent with what is observed in the experiment. Before that, let us discuss the meaning and the implications for fairness in both models.

As usual in the aversion-to-inequality-class of models, the equity term in the motivation function (3) can be interpreted as the interplay of two contrasting forces when measuring the effect of giving one more dollar to my opponent: each individual evaluates his standing in absolute terms and in relative terms. The way in which such an evaluation is performed is however specific to the transcontinental setting. In fact, the comparison of utilities is done at the level of the real payoffs, in order for the purchasing power inequality to be included in the relative standings comparison. Since in the game the marginal utility of money is lower for French than it is for Indian (with the same pecuniary payoff Indian can buy about four times

what French player can do), the inequality of purchasing power operates as the reference norm. The specific kind of inequality related to the game is the rationale behind the norms that we call "Local Equity"(the *ALIReal* model (3) opposed to the original *ALINom* model of Fehr and Schmidt).

By contrast, the *AGIReal* model (4) predicts that the comparison of utilities is performed at a broader level, a global one. In that case, what individuals take into account to measure their relative standing is the (difference between their) overall ("global") wealth beyond the game. Being averse to Global Inequality between individuals entails that subjects base their interpersonal comparisons of utility on what they know of the others' utilities both inside and outside of the game. It means that, even when measuring income inequalities utility should measure the individual's global well-being (see Elster and Roemer, 1991). This is why the splitting behavior associated with the Global Inequity vision of things is a compensatory one, in favor of the beyond-game worst-off individual. If they were following this norm of justice, individuals should be willing to use the game as an opportunity for reducing overall inequalities. In our experiment, this would have meant the French be happy when most of the stake was left to the Indian subjects. Now, we observed the opposite in both transcontinental treatments.

4.3. Discussion of the *ALIReal* model

From now on, we only focus on the model (4), as the experimental data unambiguously show that this model is more relevant than the others for the Transcontinental Ultimatum Game.

In the *ALIReal* model a sub-game perfect equilibrium offer is a x_j* such that:

$$\begin{cases} x_j^* = s(\alpha,\theta) \; for \; \dfrac{\beta}{\theta(1-\beta)} < 1 \\ x_j^* \in \left[s(\alpha\ ,\theta), \dfrac{\theta}{\theta+1} \right] for \; \dfrac{\beta}{\theta(1-\beta)} = 1 \\ x_j^* = \dfrac{\theta}{\theta+1} \; for \; \dfrac{\beta}{\theta(1-\beta)} > 1 \end{cases}$$

where $s(\alpha\ ,\theta)$ is the minimum acceptable offer by the player j, i.e. such that $u_j(s(\alpha\ ,\theta),1-s) \geq 0$ (with $\theta = \dfrac{\theta_i}{\theta_j}$). One can easily verify that $s(\alpha\ ,\theta) = \dfrac{\theta\alpha}{1+\theta\alpha\ +\alpha}$.

As an illustration, we make the assumption that:

$$\theta = \frac{\theta_i}{\theta_j} = 4,$$

i.e. each dollar is 4 times worthier to Indians than to French. According to the information given to subjects (see the instructions in the Appendix), this is a reasonable value for θ. To give some insights on how the *ALIReal* model works, consider for instance α=1/4; when an Indian makes offers to a French, utility for both players are represented in fig. (3) and (4), as functions of the share of the Indian player. The minimum acceptable amount by French players (see fig. (4)) is:

$$s_F(\alpha, \theta) = \frac{\theta\alpha}{1 + \theta\alpha + \alpha} = \frac{4\alpha}{1 + 5\alpha} \cong 4{,}5\,\$$$

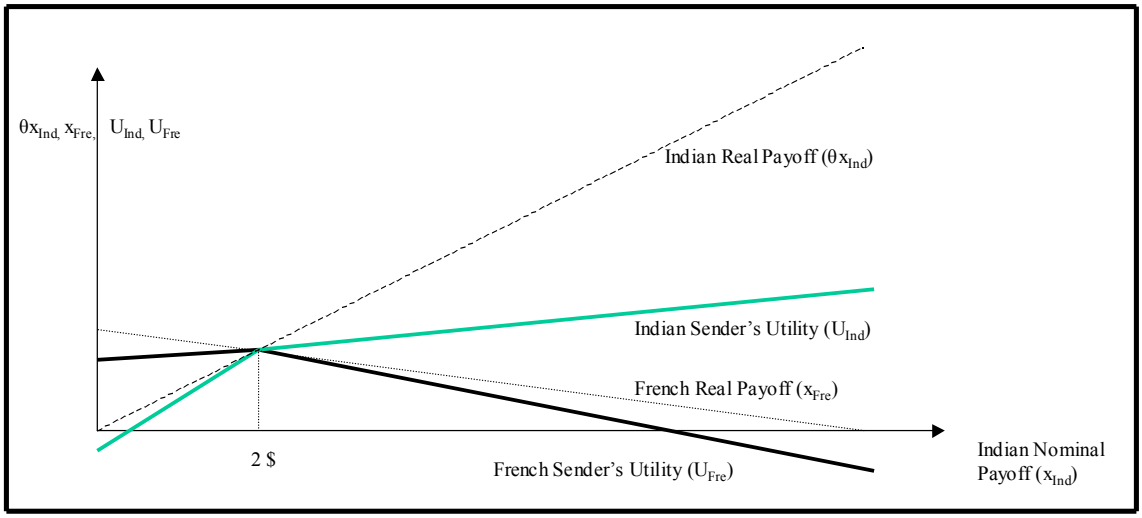

Fig. 3 : Preferences for equity in the transcontinental bargaining (I->F) – all propositions accepted

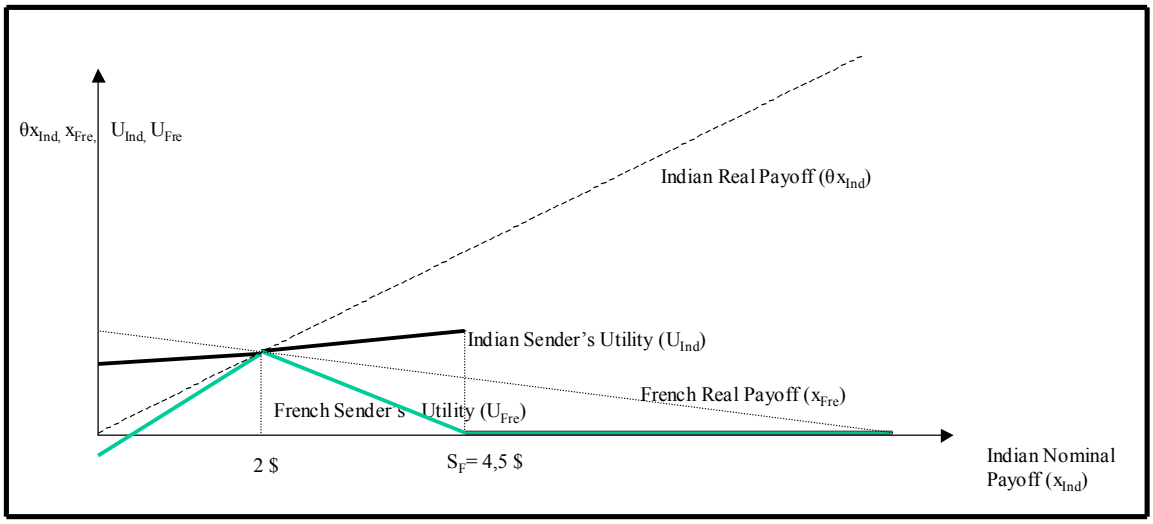

Fig. 4 : Preferences for equity in the transcontinental bargaining (I->F) – with F's rejection threshold.

Analogously, one can compute the minimum acceptable amount by Indian players (see fig. (5)) :

$$s_I(\alpha\ ,\theta) = \frac{\alpha}{\theta + \theta\alpha\ + \alpha} = \frac{\alpha}{4 + 5\alpha} \cong 0{,}5\ \$$$

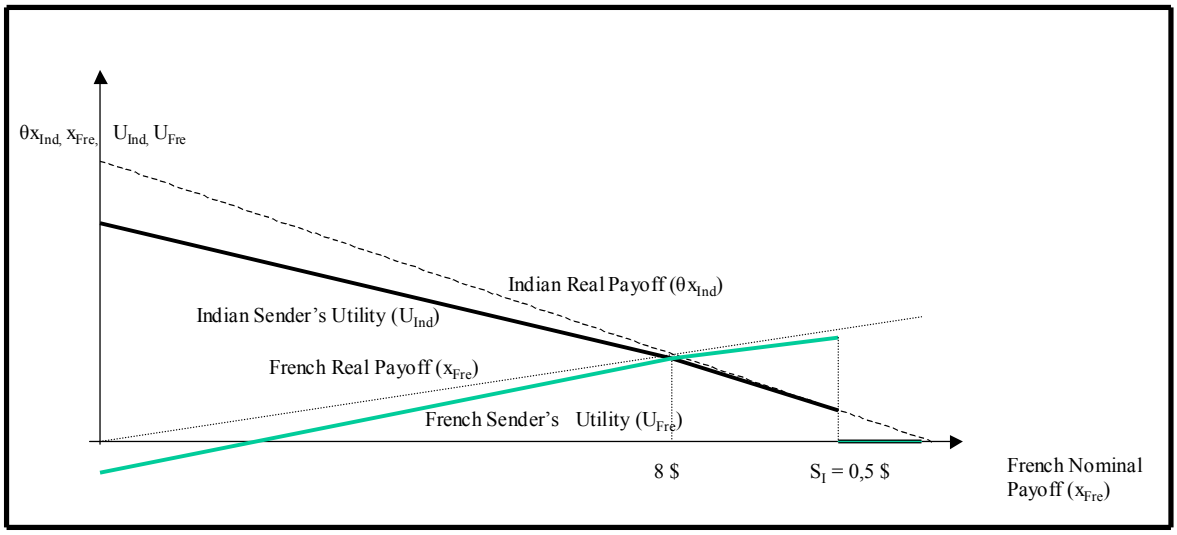

Fig. 5 : Preferences for equity in the transcontinental bargaining (F->I) – with I's rejection threshold.

It is not really possible to discuss the quantitative features of this model in relation to the experimental data, but it is still worthy observing some few things.

1. With the chosen value of θ, in both treatments the equality of real payoffs is achieved for a split of (2, 8) in favour of the French. The (2,8) split was proposed 51 times out of 120 in the FtoI treatment and 13 times out of 120 in the ItoF treatment. In particular, note that, in the latter, the large ex-ante payoffs inequality should have produced some Indian offers superior to 5 dollars, but this almost never happened.

This is similar to what is usually observed in UG experiments. The *ALINom* model, for instance, predicts such a fact, as the highest offer that the most egalitarian individual would be inclined to make is half of the stake. By contrast, our *ALIReal* model is not incompatible with offers exceeding the formal (5-5) equality, equilibrium offers from Indian are high if the parameter β is very large. For reasonable values of the parameters, the equilibrium offer for Indian players is close to 5$. The model predictions are here hardly distinguishable from formal equality. The empirical fact that individuals almost never offer more than one half of the stake can thus be explained either by not too large values for β ($0< \beta <1/2$ is plausible), or

by the idea that formal equal split may be perceived by the individuals as a focal point close to equilibrium.

In the *ALIReal* model the marginal utility of transferring one dollar to the other player is always positive and, for a given value of θ, it is higher than the marginal utility of keeping one dollar for one-self depending on the magnitude of β; when Indian players make offers to French, for a high value of β (i.e. >4/5), the disutility of keeping money for one-self rather than transferring it to the other player is extremely high, and the Indian's game utility has a maximum for the equal real payoffs split. The equilibrium offer for α=1/4 and θ=4 is :

$$\begin{cases} x_F^* = s(1/4,4) = \frac{4}{9} \; for \; \beta < \frac{4}{5} \\ x_F^* \in \left[\frac{4}{9}, \frac{4}{5}\right] for \; \beta = \frac{4}{5} \\ x_F^* = \frac{4}{5} for \;\; \beta > \frac{4}{5} \end{cases}$$

We can have situations where subjects offer systematically more than the estimated rejection threshold, depending on how averse to local inequity such players are. The equilibrium offer in the FtoI treatment is :

$$\begin{cases} x_I^* = s(1/4,4) = \frac{1}{21} \; for \; \beta < \frac{1}{5} \\ x_I^* \in \left[\frac{1}{21}, \frac{1}{5}\right] for \; \beta = \frac{1}{5} \\ x_I^* = \frac{1}{5} for \;\; \beta > \frac{1}{5} \end{cases}$$

Though we observed no ItoF offers of 4/5, some Indian subjects offered more than \$4.5 (the minimum amount French are ready to accept); for instance, looking at the 5th and 6th rounds offers[26] in the ItoF treatment, 4 subjects (out of 10) offered \$5. It is thus reasonable consider that $\beta \leq 4/5$. In the FtoI treatment, French systematically offered more than the expected minimum acceptable amount (\$0.5), and thus it is quite likely that $\beta > 1/5$.

2. One should take the previous argument as an illustration rather than an estimation of aversion to inequity parameters in the population of players (as done in Fehr and Schmidt, 1999). In fact, there exist two reasons for which we cannot directly compare the rejection

[26] It is a common procedure, in interpreting UG experimental data, to build estimations on the basis of the last periods subjects' behavior. This is motivated by the fact that, at such time of the experiment, subjects have indisputably understood the game and they might have learnt from the previous rounds (last rounds are thus seen as rounds of "converging behavior").

thresholds predicted by the model (3) with what we observed : we have very few refusals and we can't estimate directly the minimum acceptable amount by looking at the actual rejections in the experiment (the occurrence of a rejection simply says that the threshold have been overcome) ; neither can we estimate the sender's parameter of aversion to inequality since, as a consequence of the previous point, we cannot establish to what extent offers are superior to anticipated rejection thresholds. However, we can reasonably explain the difference between the two transcontinental treatments, namely that Indian make substantial offers to French and that French make low offers to Indian, by the fact that Indian expect French to reject too unequal real payoff splits while French expect Indian to accept unequal nominal payoff splits.

3. Finally, note that, given θ, we only fit data with the two equity parameters (α, β); that is we only explain the differences in the two treatments by the mean of the diversity of purchasing power and without appealing to a culture innate difference.

There exist two reasons for which it is more attractive to use this model rather than the original Fehr and Schmidt's one (modified for taking into account the culture-specificity of equity norms). First of all, if norms of culture are specific to countries or societies, one should be able to observe them in the normal framing of intra-country ultimatum game. That is, as we have observed that Indian made quite substantial offers and reject only very low offers, we could extrapolate such a behavior and conclude that Indian are highly averse to unfair distributional outcomes as senders and lowly averse to unfair split as receivers. But if this was true, Indians should be equally highly/lowly averse to unfairness when they play against Indians. In other words, if a population effect exists and it is relevant, we should observe Indians making high offers to Indians and Indian rejecting low offers made by Indians with a low propensity. As we have discussed above, one can easily reject the first fact, although it is harder to conclude on the second. On the French side, the FtoF treatment shows that French senders behave as their Slovenian or American fellows (Roth *et al.* 1991), for instance, they will offer nearly the equal split in most of French-French interactions and reject more than one time in two an offer lower than 20% of the stake. Once again, this is not what we observed when French are confronted with Indians (at least, as far as concerns the sender's behavior).

The second reason why a model as the ALIReal model (4) is more interesting than a "trivial" extension of the original one, is the fact that it can be used to interpret a larger set of laboratory data, and in particular not only the data coming from transcontinental experimentation. Consider the experiment by Kagel, Kim and Moser, where senders and

receivers were alternatively applied different rule for computing their final payoff. In the protocol, they specify a value of θ nearly equal to 3. With such a value and considering the same value for α ($\alpha = 1/4$), our model can organize their observations: the estimated rejection threshold is about 37.5% of the stake when the sender is given the low conversion rate and 6% when the sender is given the high conversion rate (and β varies between 1/4 and 3/4[27]).

Finally we have to discuss the possibility that bargaining behavior changes across time. A plausible explanation is that a sort of dynamic effect operates complementarily to the Local Equity norm. The specific norm of fairness that is implemented in a transcontinental ultimatum game needs some time to be operational and effective. Both players are likely to spend the first rounds of the game to partially adjust their behavior on their opponent's one, as they need to improve their reciprocal knowledge; the discovering of the other is accompanied by the implementation of the relevant norm of fairness.

5. Discussion

To conclude, in the transcontinental game the bargaining works as a mean to achieve the local equality (i.e. related to the marginal gains obtained in the game). The transcontinental protocol allows to distinguish between two factors: 1) the ex-ante status of the player and 2) the game status of the player; usually these two elements are confounded as players are equal ex-ante: they are drawn from the same population and a) by implicit assumption, they are endowed with the same preferences—in particular with identical marginal utility of money—and b) by the means of experimental protocol, they have the same initial endowments. While in the traditional UG, the inequity aversion concerns can only intervene with respect to the "unjust structure" of the bargaining game in our version of the UG players make use of the game to impose a social norm – what we called "local equity claim"—aimed to re-establish the equality.

If they are confirmed, these conclusions are relevant for understanding which kind of norms of Justice are internalized by the individuals. The agents can consider bargaining situations in two different ways. According to a first conception of Justice, the bargaining situation is one small world within which equity norms apply. The interpersonal comparisons

[27] The average offers for the first and second treatment were respectively of 54.4 and 24.2 out of 100.

of utility are here performed at the level of marginal utilities involved in the experiment. We can term "Local Equity" this conception. For instance, Local Equity could sustain the argument that an equitable division is one such that each participant can buy the same amount of good with the marginal income of the experiment. The crucial point is here that one can buy more with 5 dollars in India than in France.

According to a second conception of Justice, the bargaining is an opportunity to modify the situation of the individuals in some "just" direction. The interpersonal comparisons of utility are here performed at the level of non-marginal utilities, that is utility taking into account the individual's status beyond the experiment, for instance her total income. Call this the "Compensation Equity" conception. Compensation could sustain the argument that an equitable division is one such that the amount of goods that participants can buy with their total income tends to be equalized through the experiment. The crucial point is then that only allocating more to the Indians than to the French will go in the direction of equalizing total incomes. Our data show that Local Equity, rather than Compensation Equity, is the relevant conception of Justice for explaining the subjects' behavior.

We therefore reach, in the bargaining context, the same conclusion as Elster (1991) in other contexts: "...doctors and other specialist allocators do not see their role as that of reducing social injustice. They are specialised providers of specific services, not promoters of overall welfare. (...) If the specialists are aware that there is a bigger picture, they leave it to others. Often, however, nobody feels responsible for the bigger picture. The many local-justice decisions that are made by different institutions can add up to a global injustice."

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Instructions.

Introduction

Thank you very much for participating in this experiment. The object of the session is to study how people make decisions. If you follow the instructions and make careful decisions, you might earn a certain amount of money.

Currency

The currency used in this experiment is US dollars. All monetary amounts will be denominated in this currency. Your earning in dollars will be converted into Rupees at an exchange rate to be described later. Details of how to make decisions and earn money, and of how you will be paid, are provided below.

The decision situation

In this experiment, you will participate in **six** rounds. In each round, you will be paired with another person and both of you will be asked to make decisions.

You will never be informed of the identity of any of the people with whom you are paired, nor will any of them be informed of your identity.

In each round you will be presented with a problem about which you must make a decision. In each problem there are two decision makers: a sender and a receiver. You will be assigned either the role of a sender or that of a receiver randomly at the beginning of the experiment. You will keep the same role for all six rounds but will be paired with a different individual in each round.

In this decision-making situation the sender must decide how much of a given amount of dollars, in this case **$10**, to send to the receiver. (Offers must be made in multiples of 0.5 US dollars). The receiver must decide whether to accept or reject the sender's offer. If the receiver accepts the offer, then the receiver gets a payoff equal to the offer and the sender gets a payoff equal to 10 minus the offer. If the receiver rejects the offer, then both the sender and the receiver will get a payoff of 0. For example: say the sender chooses to offer the receiver x dollars out of the available ten, if offer is accepted, the sender's payoff will be 10-x and the receiver's payoff will be x, but if the offer is rejected both the sender and the receiver will get 0. At each round, the sender is paired with a different receiver and he has $10 available for the new offer.

The people with whom you will be paired

In this experiment, the other people who participate at the decision problem are French students who have very similar characteristics to you in terms of age, studies and so on. Your decisions will be transmitted via an Internet-Chat Connection, since they will be physically located in France. The experiment co-ordinator will provide the transmission.

How the experiment takes place

At the beginning of the experiment, you will be given an envelope. On the back of the envelope you will find your Identification Number (ID). Take care of that number, as you will have to use it throughout the experiment.

In the envelop you will find:

- One identification card
- Six experiment cards (one for each round)

The identification card tells you if you are to act as receiver or sender.

If you are the sender:

In the first round please take the first round experiment card and write down your offer. Then put the card into the envelope. The experiment assistant will then collect the envelopes. You will have to wait for 5-7 minutes (the time required to transmit your offer to France and receive the answers back) before the experiment can continue. Once the answers have been received, your experiment card will be retuned to you. You will find the receiver's decision to accept or reject your offer as well as your income in that round.

Before starting the next round, the experiment assistant will collect the experiment card. Once you have been told that the second round can begin, repeat the above steps.

If you are the receiver:

In the first round please take the first round experiment card and wait for some minutes while the sender's offer is made and transmitted. The experiment assistant will collect your card and give it back to you with the sender's offer. You will then write down whether you accept or reject the offer, put the card back into the envelope and return it to the experiment assistant. After this your income for the round will be computed and written onto your card which is then returned to you. Before the next round starts, the experiment assistant will collect the experiment card of that round. When you are told that the following round can begin, take a new experiment card and repeat the above steps.

Warning : you are not allowed to communicate with the other participants at any time of experiment. If you do so, you will not receive any payment at the end of the experiment.

After the sixth round…

Between the end of the sixth round and the moment of receiving your payment, you will be given a questionnaire about the experiment. The questionnaire is also part of the experiment and it is important that you fill in every part. The questionnaire is anonymous. You do not have to sign it, nor are you asked to reveal your identity. After completing the questionnaire, the experiment assistant will collect it and accompany you to the payment room. In this room will be a payment envelope with your ID on the back. Show your identification card to the assistant and hand over the experimental materiel you have been delivered with (envelop, pen, instructions sheets) in order to get the envelope.

How you will get paid

You will receive **2 US dollars** simply for showing up today and completing the experiment.

In addition, you will receive a payment based on the outcome of the six rounds of the experiment in which you participated. **Two out of the six rounds** that you participated in will be randomly chosen and you will receive the payoff that you earned in these two rounds. For instance if rounds 3 and 4 are drawn and your payoffs in those two rounds were x and y, you will receive (x+y)US$+2US$. The random draw will be done publicly, by using a dice, after the end of the sixth round (there will be two random draws, one for each country).

How your payoff will be converted into cash

The exchange rate that will be used to compute your final payment is the following:

For every dollar that you obtain in the decision problem, you will receive 47 Rupees, which approximately corresponds to the current exchange rate.

The French students will also receive 2 US dollars for their participation. For every dollar they receive in the decision problem, they will receive 1.1 Euro, which approximately corresponds to the Euro-Dollar exchange rate.

To sum-up: both you and French students will receive the following payments: 2US$ for your participation and the payoff of the two rounds selected by the random draw. All the amounts of money in dollars will be converted into Rupees for you, and into Euros for French Students.

Some details about the purchasing power in the two different countries

Here there are some details about the purchasing power in France (prices are on average):

1US$= 1 coffee in the university campus

2US$= 1 Mc Donald Cheese-Burger

5US$= 1 cinema ticket

8US$= 1 paper-back book (French pocket edition)

20US$= 1 music-CD (e.g. international rock artist/Bruce Springsteen)

Yearly 2001 GDP per capita in France: 23472 US$

Here there are some details about the purchasing power in India (prices are on average):

1US$= 1 cinema ticket

2US$= 1 meal in a medium class restaurant

5US$= 1 music-CD (e.g. international rock artist/Bruce Springsteen)

8US$= 4 English penguin paper-back books

20US$= Fare for a return train journey (3000 km, i.e. 1500 km one-way) for 1 person

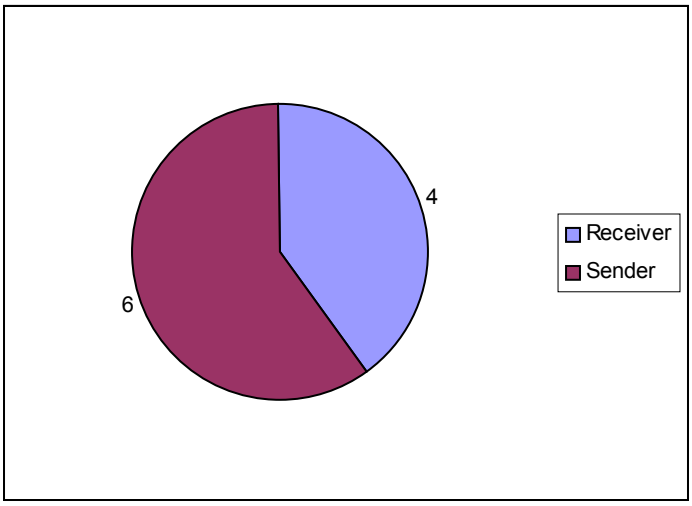
Yearly 2001 GDP per capita in India: 473 US$

French students are given the same informations about the purchasing power in the two countries and about the exchange rate of Euro-Dollars and Rupees-Dollars.

Thank you very much for your participation!!!

Test for understanding

Please answer the following two control questions:



1. The sender makes an offer to the receiver for the amount of 4 dollars out of the available 10. The receiver accepts this offer. Thus:
   The receiver obtains……
   The sender obtains……..

2. The sender makes an offer to the receiver for the amount of 4 dollars out of the available 10. The receiver rejects this offer. Thus:
   The receiver obtains……
   The sender obtains……..